Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063
June 29, 2004

Office of Air, Recycling and Radiation Protection 717-772-2724

Docket ID No. OAR-2002-0056
EPA Docket Center (Air Docket)
U.S. Environmental Protection Agency
West (6102T), Room B-108
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Sir or Madam:

The Pennsylvania Department of Environmental Protection appreciates the opportunity to submit comments on the U.S. Environmental Protection Agency's (EPA's) 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 published in the Federal Register on January 30, 2004 (69 FR 4652) and the Supplemental Notice of Proposed Rulemaking (SNPR) published on March 16, 2004 (69 FR 12398).

The Commonwealth of Pennsylvania (Commonwealth or Pennsylvania) opposes the proposed rules for new and existing electric utility steam generating units because they do not adequately protect the health of the citizens or environmental resources of the Commonwealth from the effects of emissions of mercury from the electric steam generating units. Pennsylvania is concerned that the proposed emission standards are lenient and do not protect the health of the public. Our comments will show that existing technology can achieve significant mercury emission reductions beyond those proposed by EPA.

We are concerned that the proposed rules establish control requirements that improperly sub-categorize by coal type and establish a bias against bituminous coal. The Department recognizes that Section 112(d)(1) of the Clean Air Act authorizes the EPA Administrator to "distinguish among classes, types and sizes within a category or subcategory" when establishing emission limits for MACT standards. However, this discretion does not extend to distinctions based on coal types. Such a distinction, if adopted, will result in fuel switching—electric generating stations burning bituminous coal could comply with the less stringent requirements for sub-bituminous coal simply by changing coal suppliers. This ranking of coal types will undoubtedly result in emission increases and the continued transport of mercury into Pennsylvania from upwind sources combusting western coals.

Pennsylvania strongly opposes the establishment of a cap and trade program that allows the trading of hazardous mercury emissions. The CAA does not authorize a market-based

trading approach for pollutants subject to regulation under Section 112 (d) of the act. The implementation of a market-based trading approach would significantly delay the control of mercury emissions from the utility sector and will create "hot spots" of mercury exposure that could be very detrimental to public health and the environment. Pennsylvania has achieved and maintained significant nitrogen oxide and sulfur dioxide emission reductions using market-based cap and trade programs. These programs provide flexibility for demonstrating compliance cost-effectively with the Acid Rain and the NOx Budget Trading programs. However, Congress did not contemplate the trading of hazardous mercury emissions. Therefore, we urge EPA to abandon the proposed mercury emissions cap and trade program to ensure that the integrity of existing trading programs is maintained.

Our detailed comments follow.

I. Introduction

Mercury is a leading concern among the air toxic metals addressed in the 1990 Clean Air Act Amendments (CAA) because of its volatility, persistence, and bioaccumulation as methylmercury in the environment and its neurological health impacts. Coal-fired utility units are now identified as the largest source of mercury in the United States, releasing approximately 50 tons of mercury annually or about one-third of the total anthropogenic emissions. The data collected by the EPA Information Collection Request (ICR) to coal-fired utilities indicates that there was 75 tons of mercury in the 900 million tons of coal used in U.S. power plants during 1999. On average, about 40% of the mercury entering a coal-fired power plant is captured and 60% is emitted to the atmosphere.

The Department is concerned that EPA has now alternatively proposed to revise its December 2000 finding that it is "appropriate and necessary" to regulate utility hazardous air emissions using Section 112 of the CAA which requires the owners and operators of electric utility steam generating units to install maximum achievable control technology (MACT) to reduce the emission of hazardous air pollutants. Alternatively, EPA has proposed a rulemaking to reduce mercury emissions from electric generating facilities by establishing mercury control requirements for new and existing coal-fired utility units under Section 111 of the CAA. This proposal utilizes a cap-and-trade program for reducing mercury emissions as the means to achieve what is characterized as a higher level of control of mercury. One of a number of problems with this proposal is the much longer timeframe proposed for mercury control compared to the timeframe for demonstrating compliance with MACT requirements within three (3) years from the effective date of the final MACT rule. Pennsylvania does not believe that Section 111 should be substituted for the MACT control that would be achieved under Section 112 of the CAA.

II. Health and Environmental Effects of Mercury Mandate Regulation under Section 112 of the CAA

Mercury is a dangerous reproductive and neurological toxicant. It can affect the brain, spinal cord, kidneys and liver. Mercury poisoning (i.e., high exposure levels) can affect the ability to feel, see and taste and has the potential to limit mobility. A study by the National Academy of Sciences (NAS) concluded that human exposure to methylmercury from eating contaminated fish and seafood is associated with adverse neurological and developmental health effects. Women of childbearing age (i.e., 15 to 44 years of age) and pregnant women are of special concern in terms of methylmercury exposure. Methylmercury exposure prior to pregnancy can actually place the developing fetus at risk because methylmercury persists in body tissue and is only slowly excreted from the body. Furthermore, according to the NAS, chronic low-dose prenatal methylmercury exposure has been associated with poor performance on neurobehavioral tests in children, including those tests that measure attention, visual spatial ability, verbal memory, language ability, fine motor skills, and intelligence. Adults can be affected by high mercury exposures as well, with effects on the nervous system (e.g., numbing and tingling of the extremities) and impaired vision and hearing.

A recent study released by the Centers for Disease Control and Prevention found that approximately eight percent of women of childbearing age in the U.S. had mercury levels exceeding the level considered safe by the EPA for protecting the fetus. In the United States, this translates into approximately 600,000 babies born each year at risk of developmental harm due to mercury exposure in the womb.

These studies point to the extreme effects that methylmercury has on exposed populations. As a result, EPA has a statutory obligation under the Clean Air Act to protect and enhance the nation's air resources to promote public health and welfare. The only way EPA can fulfill this obligation is to finalize stringent mercury emission limits for coal-fired power plants under Section 112 of the Clean Air Act.

III. EPA's Regulatory Approach to Controlling Mercury Emissions

A. EPA's Decision to Regulate

Section 112(n)(1)(A) of the CAA directs EPA to perform a study of the hazards to public health reasonably anticipated to occur as a result of emissions by electric utility steam generating units. Under this same subparagraph, EPA is further directed to regulate these units if the agency finds such regulation is "appropriate and necessary" after considering the results of the study.

On February 24, 1998, EPA fulfilled its statutory obligation to conduct a study when it released its "Study of Hazardous Air Pollutant Emissions from Electric Steam Generating Units – Final Report to Congress." While this report identifies electric utilities as the largest remaining unregulated source of mercury air emissions, it did not contain a determination as to whether or not regulatory controls were appropriate and necessary and deferred any regulatory determination until a later date. Because of this regulatory delay, the Natural Resources Defense Council sued EPA. The parties entered into a settlement agreement to require EPA to take final agency action to regulate such mercury emissions by December 15, 2004.

On December 20, 2000, EPA concluded that in accordance with Section 112(n)(1)(A) of the CAA, the regulation of mercury emissions from electric utilities was "appropriate and necessary," and the agency added these units to the list of source categories to be regulated under Section 112(c). 65 Fed. Reg. 79825. EPA was then required to establish emission standards for this source category under Section 112(d) of the CAA. The Department strongly supports this "appropriate and necessary" finding, which mandates EPA regulation of mercury emissions from electric utility steam generating units under Section 112(d) of the CAA.

B. EPA Proposed Alternatives

On January 30, 2004, EPA proposed regulatory alternatives for the control of mercury emissions from fossil fuel fired electric utilities. 69 Fed. Reg. 4652.

The first alternative is proposed under Section 112 of the Clean Air Act and contains two approaches. Under the first approach, EPA's December 2000 "appropriate and necessary" finding would remain in place and the agency would require utilities to install MACT controls to reduce mercury emissions as provided under Section 112(d) of the CAA. If implemented, this proposal would reduce nationwide emissions of mercury by 14 tons (29 percent) by the end of 2007. This approach has been used by EPA to control hazardous air pollutants from listed categories under Section 112(c) of the CAA. EPA is obligated by law to establish a Section 112 MACT requiring controls to reduce mercury emissions from the electric utility steam generating units.

Under the second approach, EPA's "appropriate and necessary" finding would remain in place, but the agency would remove coal-fired utility units from the Section 112(c) list and establish a "cap-and-trade" program for mercury from coal-fired utility units. EPA would directly implement a national standard under Section 112 for this approach, and when fully implemented in 2018, mercury emissions will be reduced by 33 tons from 48 tons or 69 percent. This controversial approach, which is very similar to the EPA-advocated approach under Section 111 of the CAA, is contrary to the technology-forcing provisions of Section 112(d) for existing electric utility steam generating units.

Under the second alternative, EPA would revise its "appropriate and necessary" finding and conclude that while the regulation of mercury emissions from coal-fired utility units may be appropriate under Section 112, it is not necessary because Section 111 would adequately address the public health hazards posed by mercury emissions from these units. The agency would then remove coal-fired utility units from the Section 112(c) listing. With limited exceptions, this proposal would establish performance standards for new sources that would be identical to the proposed MACT standards, and would create a "cap and trade" program for mercury emissions from existing units. States would be required to amend their respective state implementation plans. When fully implemented in 2018, mercury emissions will be reduced by 33 tons from 48 tons or 69 percent. While it is within EPA's purview to delist a source category, the body of evidence in support of continued regulation of mercury is well documented. It is a potent neurotoxin that must be regulated as a hazardous air pollutant in order to protect public health and the environment.

C. Revision of EPA's December 2000 "Appropriate and Necessary" Finding

Between December 20, 2000, when EPA made the "appropriate and necessary" finding, and January 30, 2004, when EPA proposed to revise this finding, mercury emissions from coal-fired utilities continued unabated and more scientific studies were released which confirm that EPA's initial finding is not flawed. Yet the agency believes that while it may continue to be "appropriate" to regulate mercury emissions from these units, it is no longer "necessary" merely through a revised legal interpretation as opposed to new scientific developments. Pennsylvania believes that revising EPA's "appropriate and necessary" finding is both illegal and unsupported by scientific inquiry.

Based on its December 2000 regulatory finding, EPA added coal-fired utilities to the list of source categories under Section 112(c). See 65 Fed. Reg. at 79826. According to the mandate under the CAA, EPA is required to promulgate appropriate emission standards for mercury emissions under Section 112(d).

EPA's decision not to regulate mercury, emitted by coal- and oil-fired utilities, completely disregards the mandatory requirements of Section 112 that are triggered by EPA's correct and scientifically supported decision to list these units as a source category. Although EPA may be able to avoid its MACT rule obligation for existing electric utility steam generating units by de-listing coal-fired utility units as a source category under Section 112(c)(9)(B)(ii), the adverse health effects of exposure to mercury emissions are not rebuttable.

In addition, EPA fails to support its proposed revision with any scientific evidence that mercury emissions from coal-fired units are any less dangerous than they were in December 2000. Mercury is still a persistent bioaccumulative toxic metal, which still methylates to a potent human neurotoxin and where fish consumption dominates the pathway for human exposure to methylmercury. As EPA well knows, women of childbearing age (i.e., 15 to 44 years of age) and pregnant women are of special concern in terms of methylmercury exposure. Moreover, children are also at greater risk than adults because they eat more food than adults relative to body weight. As a result, children face a high risk of adverse health effects.

Pennsylvania believes that EPA's regulatory finding that the regulation of mercury emissions under Section 112 of the CAA is both "appropriate and necessary" for the protection of public health and the environment. Therefore, Pennsylvania strongly urges EPA to withdraw its Section 111 and cap-and-trade proposals. It is imperative that EPA regulates these hazardous air pollutant emissions under Section 112 of CAA to implement fully the intent of the United States Congress. Absent new and compelling evidence, EPA is not statutorily authorized to revise its appropriate and necessary finding to regulate electric utility steam generating units under Section 112 of the CAA.

D. EPA's "Weak" MACT Approach is Flawed

EPA's MACT rule would require utilities to install MACT controls under Section 112 of the Clean Air Act and, as proposed, would reduce nationwide emissions of mercury by 14 tons (29 percent) by the end of 2007. The methodology that EPA is to follow in establishing the

MACT control levels is set forth in a November 26, 2003 memorandum by William H. Maxwell entitled "Analysis of variability in determining the MACT floor for coal-fired electric utility steam generating units."

The MACT floor concept is premised on language in the CAA for establishing these control levels and an interpretive finding by EPA published in the June 6, 1994 Federal Register (59 FR 29196) to clarify the process. In this notice, EPA stated that it "would look at emissions limitations achieved by each of the best performing 12 percent of existing sources, and average those limitations." Instead of an arithmetic mean, EPA adjusted the calculated MACT "mean" value to raise (make less strict) the standard to a 97.5 percent upper confidence level. The Department does not believe that EPA has adequately justified the adjustment to the mean.

The Department has reviewed EPA's "MACT floor" analysis for the coal subcategories. The Department believes that EPA has improperly performed this MACT floor analysis in a manner that significantly underestimates the control levels that are achievable. As a result, EPA has significantly underestimated the emission reductions achievable under the MACT standard.

The Department is concerned with the methodology EPA used to establish the "mean" value from the available data. EPA calculated the MACT control level such that 97.5 percent of the individual data points from each of the top performing 12% of the controlled sources would be in compliance. EPA's methodology would be appropriate if the standard were to be based on compliance for each individual measurement, but the proposed standard is to be a 12-month rolling average. With a year's timeframe to average individual measurements, it is inappropriate to be making allowances to accommodate compliance levels for individual values.

For example, the Department has recalculated a MACT floor using an arithmetic average of the data for each of the four facilities sampled for bituminous coal, and then established an average from these four values, which was adjusted as done by EPA for an upper confidence level of 97.5%. Pennsylvania's MACT floor analysis for bituminous coal-fired utility boilers would establish a MACT control level of 0.67 pounds of mercury per trillion Btu (British thermal unit) of heat input. EPA's calculated value is 2.0 pounds of mercury per trillion Btu of heat input, which is 3 times higher than what is actually supported by the available data.

This type of correction to the MACT floor calculation methodology, done by EPA, affects all the fuel subcategories. Therefore, the Department has recalculated the value for each of these listed subcategories.

Proposed Mercury Emission Limits (lb of mercury /Trillion Btu)

Category	**PA DEP**	**EPA**
Bituminous	0.67	2.0
Sub-Bituminous	2.4	5.8
Waste Coal	0.12 / 0.35 **(*)**	0.38

IGCC	4.5	19
Lignite	7.2	9.2

(*) Includes Piney Creek stack test data

The enclosed spreadsheets provide detailed recalculations as described in these written comments. In the subcategory for waste coal-fired boilers, EPA did not have the normal minimum number of four facilities. Because Pennsylvania has quality assured data for the Piney Creek waste coal-fired facility in this category, we included its emissions information into our analysis.

In most instances, our MACT floor calculations result in emission limits significantly lower than EPA's proposed mercury MACT limits. Therefore, we strongly urge EPA to withdraw the current proposal and propose more stringent MACT emission limits that, in accordance with Section 111(d)(1) of the CAA, considers the "classes, types and sizes of sources."

E. The Proposed Rule Should Not Categorize Coal Types

As reported by EPA's own consultant, RTI International, less than 27% of the units in the non-bituminous fuel categories would require additional mercury controls in order to meet the proposed MACT limits. In addition, an analysis of the mercury content of coal data contained in EPA's Information Collection Request (ICR) Part II demonstrates that over 62 percent of the sub-bituminous coal would comply with the proposed EPA emission standard while less than 5 percent of the bituminous coal would comply without the addition of controls. This could encourage operators of the affected facilities to switch the fuel from waste coal and bituminous coal to sub-bituminous or lignite coal. Thus, the mercury emissions to the atmosphere may increase instead of decrease.

While the Department recognizes that, under Section 112(d)(1) of the CAA, it is within the discretion of the EPA Administrator to "distinguish among classes, types and sizes within a category or subcategory" in establishing emission limits for MACT standards, this discretion arguably does not extend to distinctions based on coal types. Therefore, the Department does not support the use of coal sub-categories as a basis for establishing emission standards. Such sub-categorization leads to a direct bias against eastern bituminous and anthracite coals. Mercury is a health hazard regardless of where it is emitted and from what type of coal. The overall goal of the proposed mercury MACT rule is to greatly reduce the emission of hazardous mercury. However, the proposed control levels for sub-bituminous and lignite coals would require no, or very minimal, mercury reduction from the electric utilities burning these types of coal. As a result, Pennsylvania would continue to be impacted adversely by mercury emissions transported from areas requiring little or no reduction in mercury emissions.

The Utility Air Toxics MACT Working Group Report (October, 2002) summarizes the recommendations of all working group members on sub-categorization. Both the environmental and state and local agency stakeholders recommended that differentiation be made based on the type of unit combusting the coal, not on the coal type. This type of differentiation is consistent

with the class, type and size distinctions authorized under Section 112(d)(1) of the CAA and it reflects the technical feasibility of a source to comply with a stringent mercury control requirement and does not discriminate against a particular type of fuel. If the ranking of coal (bituminous, sub-bituminous, lignite) is legally defensible, such ranking should require equitable reductions in mercury emissions in order to adequately protect public health and the environment. The disparities among the control levels for different coal types must be addressed in order to ensure a level playing field and to avoid protracted litigation if "coal ranking" provisions are promulgated.

The Department supports the recommendation by the state and local agency stakeholders to the Utility Air Toxics MACT Working Group to reduce mercury emissions by 90 to 95 percent. This will allow sources to continue to burn any coal type if appropriate control technology is used. Such control equipment has been demonstrated to be available as discussed in the Northeast States for Coordinated Air Use Management (NESCAUM) report entitled "Mercury Emissions from Coal-Fired Power Plants" (October, 2003). In addition, the EPA Office of Research and Development has released a study finding that existing pollution control technologies can result in greater mercury reductions years sooner than EPA has proposed. This study shows that existing technology can control mercury emissions within the deadlines specified in the CAA.

F. EPA Lacks Authority to Establish a "Cap-and-Trade" Approach For Mercury Emissions

The Department strongly opposes a "cap-and-trade" approach for the regulation of mercury emissions from the utility sector for two reasons. First, the Department believes that EPA has no legal authority to regulate mercury emitting MACT sources under Section 111 of the CAA. The Department also believes that EPA is not legally authorized under Sections 111 or 112 (n) of the CAA to implement a cap-and-trade program. Second, the Department believes this approach will significantly delay the control of mercury emissions from the utility sector and will create "hot spots" of mercury exposure that could be very detrimental to humans and wildlife. Such harmful effects were highlighted on March 29, 2004 when EPA and the Food and Drug Administration issued a joint fish consumption advisory regarding the harmful health effects of consuming methylmercury-contaminated fish and shellfish.

The Congressional intent related to the regulation of mercury is clear and unambiguous – it must be regulated under Section 112 of the CAA. Mercury is explicitly identified as a hazardous air pollutant under Section 112(b). For sources other than coal-fired units, EPA must list source categories under Section 112(c) and then set emission standards for those categories under Section 112(d). While the statutory scheme for regulating mercury from coal-fired units is under Section 112(n), the Congressional intent is the same – mercury emissions from these units must be regulated under the Section 112 MACT approach. See, *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc*., 467 U.S. 837 (1984) (where if the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.)

Although Pennsylvania has been a leader in implementing market-based trading programs, EPA's proposed "cap-and-trade" program is an unreasonable interpretation of its statutory authority under Section 111 and Section 112 of the CAA. The fact that Congress chose to list specific hazardous air pollutants (HAP) under Section 112 indicated that Congress believed that these pollutants required more stringent measures than those permitted under Section 111. Moreover, regulation under Section 112 has been historically and consistently interpreted as requiring HAPs to be controlled through installation and operation of maximum achievable control technology. A cap-and-trade approach under Section 111 was never contemplated as a control technology. As a result, EPA is now acting contrary to Congressional intent by attempting to regulate mercury HAP sources under a less stringent standard than the framers of the CAA desired. This arbitrary approach will result in numerous legal challenges and additional delay in achieving the reductions necessary to protect public health and the environment. Therefore, we urge EPA to abandon the proposed mercury emissions cap and trade program to ensure that the integrity of existing innovative and cost-effective trading programs is maintained.

Pennsylvania is also concerned that this "cap and trade" approach will result in hot spots to which the Commonwealth is particularly susceptible given that all 35 of Pennsylvania's coal-fired utilities burn bituminous coal as their primary fuel source. Bituminous coals generally have high mercury, chlorine, and sulfur contents and low calcium content, resulting in a high percentage of organic mercury. This type of mercury has a residence time of a few days and is deposited near the source of the release. Therefore it is not a suitable candidate for emission trading against emission reductions in other regions, because it results in hot spots.

The 2003 results of the EPA Office of Water study *Draft Mercury REMSAD Deposition Modeling Results* reinforce Pennsylvania's concern. This modeling shows that, at mercury hot spots, local emission sources within a state can be the dominant source of deposition. At hot spots, local sources within a state commonly account for 50 percent to 80 percent of the mercury deposition. In-state sources contribute more than 50 percent of the pollution to sites in the top eight worst hot spot states, which are Michigan, Maryland, Florida, Illinois, South Carolina, North Carolina, Pennsylvania, and Texas, respectively.

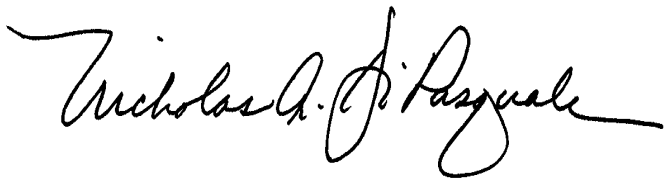
A recent Florida Everglade Study indicates that mercury concentrations found in fish and wading birds in the Everglades have dropped by 60 to 70 percent due to local mercury emission reduction efforts. This illustrates the point that despite the fact that there are global mercury transportation issues, local emission reduction efforts are very significant to the local air quality and environmental impacts.

IV. Conclusion

It is not justifiable for EPA to reverse its original December 2000 determination based upon a newly developed legal interpretation, which ignores the enormous adverse impact that mercury emissions from coal-fired units have on public health and the environment. We request that EPA retain the "appropriate and necessary" regulatory finding and develop and promulgate more stringent mercury emission reductions in keeping with Pennsylvania's calculated MACT floor than have been proposed and to promulgate MACT regulations under Section 112 of the CAA to protect public health and environmental resources including air and water quality.

Please contact Joyce E. Epps, Director of the Bureau of Air Quality, at 717-787-9702, should you have any questions concerning these comments.

Sincerely,



Nicholas A. DiPasquale
Deputy Secretary for
Air, Recycling and Radiation Protection

Enclosures