Children's Health Protection Advisory Committee

January 26, 2004

Michael Leavitt, Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: EPA's proposed action to reduce mercury from coal-fired power plants

Dear Administrator Leavitt:

The EPA's Children's Health Protection Advisory Committee (CHPAC), welcomes the opportunity to comment on EPA's proposed action to reduce mercury emissions from power plants and the associated Interstate Air Quality Rule. We applaud the Agency's intention to reduce mercury, sulfur dioxide and nitrogen oxide emissions from these sources.

The concern of the CHPAC is that this proposed action does not go as far as is feasible to reduce mercury emission from power plants, and thereby does not sufficiently protect our nation's children. While cost effectiveness is important, the priority should be to protect children's health in a timely manner. We are also concerned that mercury emissions are not adequately addressed when relying on reduced mercury emissions as a side-benefit achieved by the rule which is designed to reduce emissions of sulfur dioxide and nitrogen oxide.

EPA's proposed rules to regulate mercury under either Section 111 or Section 112 raise several issues of great significance to children's environmental health. Our comments seek to assist you and the Agency in promptly reducing to the maximum extent possible the significant health threat of mercury to our children, and to healthy child development.

We have five points to underscore our message:

1. Mercury poses a serious health threat to children, and EPA should elevate consideration of mercury's health impacts on children in finalizing this rule.

2. EPA's regulation of mercury emissions from medical waste and municipal solid waste incineration has resulted in significant reductions from those sources.

3. It is critical to move forward expeditiously to reduce mercury emissions from power plants, as they are the largest anthropogenic sources of mercury in the United States. At the same time, it is also important to continue to look broadly at additional ways to protect children's health from other sources of mercury.

4. While we do not intend to recommend one approach over another, the cap and trade program, as proposed, may not address existing hot spots and may create new local hot spots for mercury, disproportionately impacting local communities.

5. An integrated analysis from EPA is needed to determine whether the proposals are the most child-protective, timely, and cost-effective.

The Children's Health Protection Advisory Committee's related recommendations are laid out below, which we believe can be addressed within the current timetable for this rulemaking. In no way should these recommendations delay the finalization of the rule. The letter includes a set of concerns and recommendations that the Committee requests EPA rigorously investigate to determine the most child-protective and cost-effective regulatory approach to mercury.

Mercury Poses a Serious Health Threat to Children, and Therefore, the EPA Should Elevate Consideration of Mercury's Health Impacts on Children in Finalizing This Rule.

The health effects of mercury were discovered centuries ago and are well documented. The neurological effects of mercury on fetuses, infants and children are of particular concern to this Committee and they need to be more thoroughly addressed in this rulemaking. Recent landmark reports completed by the National Academy of Sciences (2000), and the Center for Disease Control and Prevention (2003), as well as EPA's Report to Congress in 1998, and EPA's 2003 publication entitled *America's Children and the Environment* have all underscored the risk posed by mercury in the environment, its prevalence, and the need for further and significant reduction.

We note the significant health effects of mercury on infants and children that have been documented in the scientific literature and summarized in those landmark reports (See Attachment A.)

From our understanding, the unique vulnerabilities of children, infants, and women of child-bearing age were not adequately considered in the development of the EPA's proposed rules. We strongly encourage the Agency to emphasize children in the finalization of this rule since the health effects of mercury exposure are significantly compelling to warrant a special case. Therefore, we strongly recommend that EPA, when finalizing the rule, take into greater consideration the health impacts on children and women of child-bearing age in as practicable a manner as possible given existing information.

Should EPA decide to move mercury regulations to Section 111, thereby changing the definition of mercury from power plants as a hazardous air pollutant, we are concerned about the unintended consequences of this re-classification for regulating mercury at the state level.

EPA's Regulation of Other Industries' Mercury Emissions Is A Good First Step.
We applaud EPA, along with medical and municipal waste incinerator operators, for reducing mercury from these large industrial sources by 90%. Based on EPA's National Emissions Inventory, mercury emissions from medical and municipal incinerators have dropped from 50 tons to 2 tons, and 42 tons to 4 tons, respectively from 1990 to 1999. This is an excellent example of effective implementation of a mercury reduction strategy, and we therefore encourage that a similarly effective approach be applied to the utility industry. We recommend that EPA promulgate a mercury rule that results in the most child-protective and cost-effective reductions of mercury from coal-fired power plants that are possible, since they represent the largest remaining source of mercury emissions in the United States.

EPA Should Move Expeditiously Forward in Regulating Utilities' Mercury Emissions, As Well As Other Sources.
We strongly support EPA efforts to reduce mercury emissions from the utility industry as they are the leading source of mercury air emissions in the U.S. today. We are aware that the U.S. population is also affected by the contribution of global sources, and we further encourage EPA to work with the international community to reduce worldwide mercury emissions. In addition, we recommend that EPA continue on its path of reducing mercury from all sources through its comprehensive Mercury Action Plan that is currently under development. We hope this process will result in the development of improved data collection systems that can more accurately report exposures and assess the impact of mercury exposures on children's health. The reduction of mercury emissions from power plants and other sources offers EPA a unique opportunity to positively affect children's health. Thus, mercury should be a regulatory target in its own right, rather than regulated indirectly through side benefits obtained from regulating sulfur dioxide and nitrogen oxide in the Interstate Air Quality Rule.

EPA Should Ensure That Mercury Hot Spots Are Prevented.
The CHPAC has concerns that the cap and trade program, as proposed, may not address existing hot spots and may create new local hot spots for mercury, disproportionately

impacting local communities (e.g., those depending on subsistence fishing). We recommend that EPA evaluate the possibility that hot spots could result and that the proposed regulation should be written to ensure that existing hot spots are reduced and no new ones are created. In addition, EPA should take into consideration the findings in studies showing that reducing mercury air emissions has a positive impact on local mercury levels such as demonstrated in the Florida Everglades and other studies.

The CHPAC Strongly Questions Whether The Current Options Go As Far As Possible and Therefore Requests More Analysis.

To protect children from mercury exposure, EPA needs to go beyond the minimum required by statute (i.e., the proposed MACT floor). Given that CHPAC does not believe that the current proposal goes as far as feasibly possible, we seek an integrated analysis from EPA with respect to whether emissions reductions under either of these proposals are the most child-protective, timely, and cost-effective. In particular this analysis should examine:

- What available technologies reduce mercury emissions from coal-fired power plants the most?
- What are the costs of these various technologies?

As far as is practicable given existing information, EPA should address the following questions as well:

- What are the health implications of mercury reductions under the varying technological options/control options identified above?
- What are the economic benefits of reducing children's exposure to mercury?

We would like EPA to share the results of this integrated analysis with CHPAC for further consideration so that we may better advise EPA on the most child-protective regulatory options. The CHPAC is aware of a couple of documents that have been developed to address the issues above, namely, the analysis conducted by the Utility MACT work group in May 2002 and the NESCAUM report from November 2003. The CHPAC would like to know how EPA has addressed these additional analyses.

In addition, to underscore our main point that EPA should establish a rule that results in the maximum emissions reductions feasible, we recommend that EPA create incentives in the rule that stimulate the development of technologies to expedite these mercury emissions reductions. For either proposed option, we recommend the best available technology for mercury be utilized in order to reach the greatest maximum benefit for children's health.

Conclusion

We would like to thank you for taking the time to consider our expert advise and counsel, and we would like to meet with you and your staff to follow-up on the recommendations made in this letter namely,

- Using existing information to the extent practicable, evaluate the exposures and health risks resulting from the proposed mercury emissions reductions options to children and women of child-bearing age, including how these might vary under different regulatory options.
- Evaluate the possibility that hot spots could result and that the proposed regulation should be written to ensure that existing hot spots are reduced and no new ones are created.
- Using existing information, conduct an integrated analysis of technologies, costs, health impacts, and economic benefits, before choosing a regulatory option.

We look forward to being of assistance to you as you continue to fulfill your commitment to protect our nation's children and our future generations from mercury exposure, in the context of finalizing this rule, the forthcoming Mercury Action Plan, and other mercury control strategies.

Sincerely,

Dr. Melanie A. Marty, Ph.D., Chair'
Children's Health Protection Advisory Committee

Cc: Jeffrey Holmstead, Assistant Administrator, Office of Air and Radiation
Susan Hazen, Acting Assistant Administrator, Office for Pollution Prevention and Toxic Substances
Joanne Rodman, Acting Office Director, Office of Children's Health Protection

Attachment A

- Organic compounds of mercury such as methylmercury are the most toxic forms of the element.[1]
- Pregnant and reproductive age women are the primary exposed population of concern. Exposure to methylmercury in the womb can cause adverse developmental and cognitive effects in children, even at low doses that do not result in effects in the mother.[2]
- Prenatal exposure from maternal consumption of fish can also cause impairments later on in the developing child. Recent epidemiologic studies have found that children exposed to even low levels of mercury before birth experience subtle symptoms of neurologic damage. Specific effects include poor performance on neuro-behavioral tests, particularly on tests of attention, fine motor function, language, visual-spatial abilities (e.g., drawing), and memory. These children will likely have to struggle to keep up in school and might require remedial classes or special education.[3]
- In addition to exposure *in utero,* infants and children have ongoing dietary exposure to methylmercury. Children and infants are sensitive to mercury's effects because their nervous systems continue to develop until about age 20. Children also may have higher exposures than adults pound for pound because a child eats more food relative to his or her body weight than an adult does. As a result, they have a higher risk for adverse health effects than adults do.[4]
- Mercury contamination in fish across the United States is so pervasive that health departments in 42 states have issued fish consumption advisories.[5] In addition, 11 states have consumption advisories for every inland water body for at least one fish species; 6 states have consumption advisories for canned tuna, and 8 have statewide coastal marine advisories for king mackerel.
- A new study released by CDC details the levels of mercury and 115 other environmental contaminants measured in the blood and urine from a representative sample of American adults and children. According to the second *National Report on Human Exposure to Environmental Chemicals,* almost 8 percent of women of child bearing ages (16 to 49) have levels of mercury that exceed what is considered safe for a fetus. Across the entire U.S. population, this could mean that millions of children are at risk.[6]

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[1] U.S. EPA, http://www.epa.gov/mercury/heaIth.htm

[2] U.S. EPA, *America's Children and the Environment, 2003.*

[3] Toxicological Effects of Methylmercury. National Academy Press, Washington, DC, 2000. http://www.nap.edu

[4] U.S. EPA. 1997b. Mercury Study Report to Congress, Volume VII: Characterization of Human and Wildlife Risks from Mercury Exposure in the United States. EPA-452/R-97-009.

[5] http://www.epa.gov/ost/fish

- A study in the Florida Everglades estimated how quickly fish tissue levels respond to decreased regional mercury emissions. Reductions in total mercury emissions of approximately 90% since the late 1980s have been paralleled by a reduction in average fish tissue methylmercury levels of about 80%.[7]

[6] Schober SE, et.al. Blood mercury levels in US children and women of childbearing age, 1999-2000. JAMA 2003:289(13);1667-1674.

[7] Florida Department of Environmental Protection (FDEP). *Integrating Atmospheric Mercury Deposition with Aquatic Cycling in South Florida*, November 2003.