

April 29, 2004

EPA Docket Center (Air Docket)
U.S. EPA West (6102T)
Room B-108
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Washington, DC 20460

RE: Docket ID No. OAR-2002-0056.

As organizations representing medical, nursing and public health professionals, women, advocates of children and families, faith organizations and others concerned about environmental health risks -- especially risks to children -- we appreciate the opportunity to comment on the Environmental Protection Agency's (EPA) proposed action to reduce mercury emissions from power plants and the associated Interstate Air Quality Rule.

The American public is not adequately protected from exposure to mercury in the environment. We support the Agency's intention to reduce mercury, sulfur dioxide and nitrogen oxide emissions from these sources. However, if vulnerable populations such as pregnant women and children are to be adequately protected from exposure to mercury, the Agency must take stronger, more immediate and more effective actions than those proposed in these rules.

Children Have Unique Vulnerabilities and Susceptibilities

To adequately protect children from harmful environmental exposures and assure their healthy development, this rule and others must fully incorporate these basic pediatric principles:

- Children are growing. Pound for pound, children eat more food, drink more water and breathe more air than adults. Thus, they are likely to be more exposed to substances in their environment than are adults. Children have higher metabolic rates than adults and are different from adults in how their bodies absorb, detoxify and excrete toxicants..
- Children's systems, including their nervous, reproductive, digestive, respiratory and immune systems, are developing. This process of development creates periods of vulnerability. Exposure to toxicants, such as mercury, at such times may result in irreversible damage when the same exposure to a mature system may result in little or no damage.
- Children behave differently than adults, leading to a different pattern of exposures to the world around them. For example, they exhibit hand-to-mouth behavior, ingesting whatever substances may be on their hands, toys, household items, and floors. Children play and live in a different space than do adults. For example, very young children spend hours close to

the ground where there may be more exposure to toxicants in dust, soil, and carpets as well as low-lying vapors such as radon, mercury vapor or pesticides.

- Children do not have control over their environment and are not able to remove themselves from harmful situations. They must rely on adults to assure they are in a healthy environment.

Though the process of child growth and development does not change, the world in which today's children live has changed tremendously from that of previous generations. One of these changes is the phenomenal increase in substances to which children are exposed. As mentioned below, mercury releases in the environment due to human activity have increased substantially over time.

Mercury Poses a Serious Health Threat to Children

The health effects of mercury were discovered centuries ago and are well documented.

Exposure to methylmercury, the highly toxic form of organic mercury found in our environment and food, may adversely affect reproductionⁱ and a variety of organ systems, including the cardiovascular system^{ii,iii} and, in particular, the brain and central nervous system.^{iv} Mercury is a potent developmental neurotoxicant; its effects on fetuses, infants and children are of particular concern. The developing brain is most sensitive to methylmercury exposure while *in utero*.^v Methylmercury crosses the placenta easily and readily penetrates the fetal brain.^{vi}

High dose exposures to methylmercury during fetal development can result in low birth weight, small head circumference, severe mental retardation, cerebral palsy, deafness, blindness, and seizures.^{vii} Recent epidemiological studies have shown that children exposed to moderate or low levels of mercury before birth may also experience neurological and development impairment. Outcomes may include delayed walking, delayed speech, and decreased performance on tests of attention, fine motor function, language, visual-spatial abilities, and memory.^{viii,ix,x} These children will likely have to struggle to keep up in school and might require remedial classes or special education.^{xi}

In addition, 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. Because children also may have higher exposures than adults, due to their body size, diet and behavior, as described above, they have a higher risk for adverse health effects than do adults.^{xii}

Sources of mercury and route of exposure

The EPA has determined that the nation's 1,100 coal-fired power plants are the largest anthropogenic sources of mercury in the United States, responsible for more than one-third of all industrial mercury pollution. Those facilities emit 50 tons of airborne mercury every year.

Airborne mercury eventually deposits in water bodies and has contaminated more than 12 million lake acres and 473,000 river miles.^{xiii} (See below). Available data suggest that human activities have increased levels of mercury in the atmosphere by roughly a factor of 3, average deposition rates by a factor of 1.5 to 3 and deposition near industrial areas by a factor of 2 to 10.^{xiv}

Aquatic microorganisms convert mercury into its organic form, methylmercury, which "bioaccumulates" in the food chain, especially in fish species. Human beings are mainly exposed to methylmercury by eating fish and other kinds of seafood.

Exposure and risks related to mercury are too high

Virtually all freshwater and ocean fish and shellfish are contaminated with methylmercury to varying degrees.^{xv} Mercury contamination in fish across the United States is so pervasive that 44 states and territories issued warnings about eating mercury-contaminated fish in 2002^{xvi} and 17 states have consumption advisories for every inland water body for at least one fish species. In the last decade, public health warnings designed to minimize the public's exposure to methylmercury-contaminated fish and shellfish have increased dramatically. State-level fish consumption advisories for mercury are up 138 percent from 1993 to 2002.

The methylmercury levels commonly found in fish include some that pose a health risk to the public.^{xvii} According to current guidelines, women of childbearing age should never eat tilefish, swordfish, shark and mackerel because their mercury content is so high that if eaten while they are pregnant, injury to the fetal brain is possible.

Landmark reports completed by the National Academy of Sciences (2000), and the Center for Disease Control and Prevention (CDC) (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.

In January 2003, CDC found that nearly eight percent of women of child-bearing ages have blood mercury concentrations higher than the level considered safe by the EPA -- mercury that they will unknowingly transmit to children *in utero*.^{xviii} This could mean that as many as 300,000 newborns each year are at risk of serious congenital neurological and developmental impairment.

Regulating mercury has been proven to be effective

Requiring decreases in mercury emissions through regulation is successful and shows surprisingly rapid and localized public health benefits.

EPA's regulation of mercury emissions from other sources -- medical waste and municipal solid waste incineration -- has been effective in achieving significant reductions. Based on EPA's National Emissions Inventory, mercury emissions from medical and municipal

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incinerators have dropped by 90%, 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 strongly encourage the Agency to adopt a similarly effective approach for the utility industry.

A decade-long study sponsored by the EPA, the U.S. Geological Survey, and the State of Florida recently revealed that strong regulations of airborne mercury emissions produce swift, dramatic improvements in mercury contamination in local fish tissues. After south Florida waste incinerators were required to reduce their mercury emissions by 90% (they achieved 99% reduction), mercury levels in Everglades fish and wildlife declined by 60% in just 10 years.^{xix} This study illustrates the feasibility of these measures to protect public health and how strong pollution controls are an effective approach to cleaning up the local environment and protecting public health.

The Proposed Rule is Deeply Flawed

The proposed rule includes unacceptable and unneeded delay

The proposed rule takes years longer than the law permits. EPA is legally required to reduce mercury emissions to the maximum extent possible by 2008. EPA admitted in 2001 that using a so-called Maximum Achievable Control Technology (MACT) standard to enforce the Clean Air Act could cut power plant mercury pollution by nearly 90%, from 48 tons per year currently to about 5 tons by 2008.

Instead, the Agency's proposal would reduce mercury emissions in two phases -- capping emissions at 34 tons by 2010 (two years after 2008) and 15 tons by 2018 (10 years after 2008). This delay is unacceptable and we strongly urge the Agency to reject this approach.

Under the proposed rule, more mercury will be released

As mentioned above, EPA would allow far more mercury to be emitted by postponing major mercury reductions from power plants until 2018 or beyond. Over the 10-year period from 2008-2018, the EPA's rule would allow an extra 328 tons of mercury emissions compared with what is achievable.

No further reductions in mercury emissions are scheduled after 2018, and the proposal allows at minimum of 15 tons of mercury emitted from power plants per year indefinitely.

These additional tons of mercury are hazardous to our children's health, and realistic approaches exist which would almost completely halt these emissions. The EPA should maintain the goals that are achievable under the MACT standard.

The Agency seeks to declare that mercury is no longer a hazardous air pollutant

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The Agency proposes removing mercury from power plants from EPA's list of hazardous (toxic) air pollutants. This re-classification would have unintended, negative consequences for children's health.

EPA's draft proposal would rescind the December 2000 EPA finding that mercury emissions from power plants constitute hazardous air pollution requiring the maximum amount of technologically achievable reduction. Instead, EPA has proposed to downgrade mercury emissions -- only from the utility industry -- from a hazardous pollutant to a run-of-the-mill pollutant. This decision allows less effective requirements for decreasing mercury emissions. EPA has proposed a 30 percent reduction goal under weaker, ineffective provisions of the Clean Air Act, which would be accompanied by a mercury-emissions trading program stretched out over 15 years, rather than the three years required by law.

To reverse its finding that mercury is a hazardous air pollutant, the Agency would have to determine that emissions, ambient concentrations, bioaccumulation or deposition of mercury may not reasonably be anticipated to cause adverse human health or environmental effects.

As described repeatedly in these comments and elsewhere, it is not possible to make such a finding. Mercury is clearly a hazardous air pollutant as defined under the Clean Air Act. To step back from a finding that mercury is a hazardous air pollutant is a denial of clear fact and sound science, resulting in the release of higher levels of mercury into the environment. We strongly urge the Agency to drop this approach because of the negative impact it will have on children's health, aside from the fact that it violates the spirit if not the letter of the law.

A "cap and trade" approach is not appropriate for mercury; children living in the resulting "hot spots" will suffer

The cap and trade program proposed by the Agency 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). The Florida study cited above points to the importance of local mercury pollution sources and the localized benefits from mandating mercury emission reductions.

Cap-and-trade regulatory models may have been effective in decreasing emissions of certain pollutants due to their typical dispersal patterns or lower toxicity. But we are concerned that, since mercury emissions tend to concentrate nearer their source than do some other air pollutants, a cap and trade program may result in harm to children in certain communities where high mercury emissions would be allowed to continue or even expand. Every child, in every city, town, and rural community throughout America, deserves our best efforts to reduce mercury emissions as much as possible.

EPA has the responsibility to assure that any new proposal should ensure that existing hot spots are reduced and that no new ones are created. Currently, the Agency's proposal does the reverse. We strongly urge the Agency to drop the trading program for mercury

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Conclusions:

This rule does not go far enough to protect children

As outlined above and in Federal policy documents, children have unique vulnerabilities and susceptibilities, which the EPA must recognize and address. Executive Order 13045 directs each Federal agency to “make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children” and to “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” EPA’s October 1995 policy directive requires the Agency to consistently and explicitly evaluate environmental risks of infants and children in all risk assessments, risk characterizations, and in setting environmental and public health standards.

These protective steps are not evident in either this proposal’s development nor its conclusions. As outlined throughout our comments, the proposed action does not go as far as is feasible and necessary to reduce mercury emissions from power plants, and thereby does not sufficiently protect our nation’s children.

The Agency must move promptly to protect children

EPA should elevate its consideration of mercury’s health impacts on children in finalizing this rule.

The Agency’s priority must be to protect children’s health in a timely manner, not to extend deadlines and increase emission caps so that children will be exposed to higher levels of mercury over a longer time than otherwise achievable. 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. Nor are our most vulnerable children protected under a “cap and trade” approach which will maintain or increase localized mercury emissions in certain communities.

We urge 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.

Thus, at the least, the Agency must maintain its earlier timetables and goals for decreasing mercury emissions, maintain mercury as a hazardous air pollutant, and eliminate the proposed mercury “cap and trade” program.

If you have questions or comments on this statement, please contact Daniel Swartz at the Children’s Environmental Health Network, 202-540-4033 ext. 16. (Mailing address: 110 Maryland Avenue NE, Suite 511, Washington, DC 20002)

Thank you.

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Sincerely,

Alliance for Healthy Homes
American Academy of Pediatrics
American Public Health Association
Association of Women's Health, Obstetric and Neonatal Nurses
Children's Environmental Health Network
Improving Kids' Environment
Learning Disabilities Assn. of America
National Association of County and City Health Officials
National Association of School Nurses
West Harlem Environmental Action, Inc.

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ⁱⁱⁱ Gualler E, et. al. Mercury, fish oils, and the risk of myocardial infarction, *N Engl J Med*. 2002;347:1747-54.

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^v Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for mercury. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

<http://www.atsdr.cdc.gov/toxprofiles/tp46.html>

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^{xiii} U.S. EPA, Office of Water. Update: National Listing of Fish and Wildlife Advisories. May 2003. EPA-823-F-03-003. <http://www.epa.gov/ost/fish>

^{xiv} From UNEP Global Assessment of Mercury, 2003 <http://www.chem.unep.ch/mercury/Report/Key-findings.htm>

^{xv} U. S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Seafood. Mercury Levels in Seafood Species. May 2001. <http://www.cfsan.fda.gov/~frf/sea-mehg.html>.

^{xvi} U.S. EPA, Office of Water. Update: National Listing of Fish and Wildlife Advisories. May 2003. EPA-823-F-03-003. <http://www.epa.gov/ost/fish>

^{xvii} U. S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Seafood. Mercury Levels in Seafood Species. May 2001. <http://www.cfsan.fda.gov/~frf/sea-mehg.html>.

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<http://www.floridadep.org/labs/mercury/index.htm>.