

Revised January 29, 2004

## EPA Proposes Options for Significantly Reducing Mercury Emissions from Electric Utilities

### Action

- On December 15, 2003 the Environmental Protection Agency (EPA) proposed a rule to permanently cap and reduce mercury emissions from power plants for the first time ever.
- In a separate but closely related action known as the “Interstate Air Quality Rule”, EPA will propose a regulation to improve air quality in the Eastern United States. This proposal would address windblown air pollution by requiring states to reduce sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) emissions. States could comply with these requirements through a cap and trade system based on the successful Acid Rain Trading Program.
- EPA believes it makes sense to address mercury, SO<sub>2</sub> and NO<sub>x</sub> emissions simultaneously. These rules would protect public health and the environment without interfering with the steady flow of affordable energy for American consumers and businesses.
- The health benefits of addressing mercury, SO<sub>2</sub>, and NO<sub>x</sub> in an integrated fashion are dramatic. EPA expects this suite of actions to reduce the number of asthma attacks and heart attacks around the country by lowering the levels of fine particles and ground-level ozone in the air. By reducing mercury levels, it also would reduce potential risks for pregnant women and young children who consume certain fish from local streams and lakes.
- EPA is proposing two alternatives for controlling emissions of mercury from utilities and will take comment on the alternatives before taking final action. The alternatives include:
  1. **proposed rule requiring utilities to install controls known as “maximum achievable control technologies” (MACT)** under section 112 of the Clean Air Act. If implemented, this proposal would reduce nationwide emissions of mercury by 14 tons (29 percent) by the end of 2007; and
  2. **proposed rule establishing “standards of performance”** limiting mercury emissions from new and existing utilities. This proposal, under section 111 of the Clean Air Act, would create a market based “cap-and-trade” program that, if implemented, would reduce nationwide utility emissions of mercury in two distinct phases. In the first phase, due by 2010, emissions will be reduced by taking advantage “co-benefit” controls – that is mercury reductions achieved by reducing SO<sub>2</sub>, and NO<sub>x</sub>.



emissions. When fully implemented, mercury emissions will be reduced by 33 tons (69 percent).

EPA's modeling projects that applying this approach to controlling mercury emissions from utilities will yield much greater health and environmental benefits than could be achieved through a traditional MACT standard. This modeling is based on the successful Acid Rain Trading Program, which resulted in more emissions reductions than required, sooner than required, and at less cost to the consumer than expected with a very high rate of compliance.

- **EPA also is proposing to revise its December 2000 finding** that it is “appropriate and necessary” to regulate utility hazardous air emissions using the MACT standards provisions (section 112) of the Clean Air Act. This action would give EPA the flexibility to consider a more efficient and more cost effective way to control mercury emissions.
- EPA will take comment on this action for 60 days after publication in the *Federal Register*. EPA intends to hold two public hearings on this proposed rule.
- This mercury proposal coupled with the proposed Interstate Air Quality Rule calls for the largest single industry investment in any clean air program in the past quarter-century.

### **Mercury Emissions – Both Naturally Occurring and Man-made Sources**

- Mercury is a toxic, persistent pollutant that accumulates in the food chain. Fossil fuel-fired utilities are the largest source of human-generated mercury emissions in the United States.
- Concentrations of mercury in the air are usually low and of little direct concern. However, atmospheric mercury falls to Earth through rain or snow and enters lakes, rivers and estuaries. Once there, it can transform to its most toxic form, methylmercury, and accumulate in fish and animal tissues.
- Americans are exposed to mercury primarily by eating contaminated fish. Because the developing fetus is the most sensitive to the toxic effects of mercury, women of childbearing age are regarded as the population of greatest concern. Children who are exposed to low concentrations of methylmercury prenatally are at increased risk of poor performance on neurobehavioral tasks, such as those measuring attention, fine motor function, language skills, visual-spatial abilities, and verbal memory.

### **Cap-and-Trade Basics**

- The proposed standards of performance establish a cap-and-trade system for mercury based on EPA's proven Acid Rain Program. The Acid Rain Program has produced remarkable and demonstrable results, reducing SO<sub>2</sub> emissions faster



and at far lower costs than anticipated, and resulting in wide-ranging environmental improvements.

- Under the cap-and-trade approach proposed in this rulemaking, EPA would allocate to each state specified amounts of emission “allowances” for mercury. The states would allocate those allowances to utilities, which would trade them. A utility must hold sufficient allowances to cover its emissions each year, so the limited number of allowances ensures that the required reductions are achieved.
- The mandatory emissions caps in the proposed standards of performance, coupled with significant automatic penalties for noncompliance, would ensure that human health and environmental goals would be achieved and sustained. At the same time, stringent emissions monitoring and reporting requirements make flexibility possible. The flexibility of allowance trading creates financial incentives for utilities to look for new and low-cost ways to reduce emissions and improve the effectiveness of pollution control equipment.

### **MACT Basics**

- The Clean Air Act Amendments of 1990 required EPA to complete two studies related to mercury and report their findings to Congress. One focused on the health and environmental impacts of mercury, the other focused on hazardous air emissions, including mercury, from utilities.
- In a pair of 1994 legal settlements, EPA agreed to revised deadlines to complete these studies. EPA also agreed to make a determination about whether MACT regulation was appropriate and necessary and, if necessary propose a MACT standard to reduce hazardous air emissions from coal and oil-fired utilities.
- The “Mercury Study” analyzed mercury emissions from utilities and other industrial sources, the health and environmental impacts of those emissions and available control technologies. EPA issued the Mercury Study in December 1997.
- In the “Utility Report” to Congress, issued in February 1998, EPA analyzed emissions of toxic air pollutants, including mercury, from utilities.
- The 1994 agreements were modified several times. In 1998, EPA agreed to issue its regulatory determination by December 2000; to propose regulations by December 15, 2003; and to finalize regulations by December 15, 2004.
- In December 2000, EPA announced that it would regulate emissions of mercury and other air toxics from coal- and oil-fired electric utilities under section 112 of the Clean Air Act. While this announcement did find that it was necessary and appropriate to control mercury emissions from utilities, it did not specify what those levels of control would be. To do so would have prejudged the outcome of the Agency’s rulemaking effort.



- Under the MACT provisions of the Clean Air Act, sources commonly are given only three years to comply with emission reduction requirements. For an industry like power generation, which has many facilities requiring controls, the MACT approach raises concerns about how quickly new control technologies could be put into place. Further, the short compliance window would preclude the effective use of developing technologies. Relative to an allowance trading system, the MACT also restricts the options and incentives for power plants to achieve low-cost reductions. These higher costs could lead to increased electricity prices.
- MACT standards also generally require industries to meet limits that are currently being demonstrated by a number of existing facilities. EPA would like to explore innovative ways of achieving reductions greater than those being achieved through existing technologies.
- Currently, there are no adequately demonstrated control technologies specifically designed to reduce mercury emissions from coal-fired utilities. However, there is available data that indicate controls for reducing emissions SO<sub>2</sub> and NO<sub>x</sub> also are effective, in some cases, at reducing mercury emissions from coal-fired utilities. This is another reason EPA believes it important to couple the mercury rule with the Interstate Air Quality Rule. The degree of removal depends in part on the type of coal being burned.
- EPA's goal is to provide the highest degree of mercury control possible while ensuring the safety, affordability, and reliability of the nation's electricity supply. These actions involve a range of options that will encourage the development of new technologies to reduce emissions of mercury beyond that which would occur from the implementation of a traditional MACT standard alone.

#### **For More Information**

- For information on the mercury proposal, visit [www.epa.gov/mercury/](http://www.epa.gov/mercury/)
- For information on the proposed Interstate Air Quality Rule, visit [www.epa.gov/interstateairquality/](http://www.epa.gov/interstateairquality/)

