U.S. Environmental Protection Agency
Office of Inspector General

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At a Glance

Catalyst for Improving the Environment

Why We Did This Review

In support of its Clean Air Mercury Rule (CAMR), the Environmental Protection Agency (EPA) conducted a detailed analysis of mercury emissions and deposition. EPA concluded that "utility-attributable" hotspots would not occur after implementation of CAMR's mercury trading program. This evaluation assesses the basis for EPA's conclusion.

Background

About 40 percent of U.S. man-made airborne mercury is emitted from coal-fired utilities. EPA revised a previous finding that mercury emissions from coal-fired utilities be regulated with a Maximum Achievable Control Technology standard. Instead, EPA adopted a cap-and-trade program to reduce mercury emissions. Several State agencies and environmental groups objected to these actions. One concern was that a cap-and-trade program could result in localized areas with unacceptably high levels of mercury, or "hotspots."

For further information, contact our Office of Congressional and Public Liaison at (202) 566-2391.

To view the full report, click on the following link: www.epa.gov/oig/reports/2006/20060515-2006-P-00025.pdf

Monitoring Needed to Assess Impact of EPA's Clean Air Mercury Rule on Potential Hotspots

What We Found

EPA brought significant scientific, technical, and modeling expertise to bear in developing a specific methodology to consider the potential for mercury hotspots. Several uncertainties associated with key variables in the analysis could affect the accuracy of the Agency's conclusion that the Clean Air Mercury Rule (CAMR) will not result in "utility-attributable" hotspots. We noted:

- gaps in available data and science for mercury emissions estimates,
- limitations with the model used for predicting mercury deposition,
- uncertainty over how mercury reacts in the atmosphere, and
- uncertainty over how mercury changes to a more toxic form in waterbodies.

Two recent studies support the need for additional monitoring to ensure that EPA's analysis has properly estimated the contribution of local, regional, and global sources on U.S. deposition. These studies are "*Mechanisms of Mercury Removal by O_3 and OH in the Atmosphere,"* published in *Atmospheric Environment* in June 2005; and "*Sources of Mercury Wet Deposition in Eastern Ohio, USA,*" submitted for publication in a scientific journal in February 2006. Results of both studies were not available until after EPA issued CAMR in March 2005, and thus could not have been considered in EPA's deliberations on CAMR. Although EPA indicated in CAMR that it would monitor the impact of the cap-and-trade rule on mercury deposition, the Agency has not yet developed a monitoring plan for this purpose. Without field data from an improved monitoring network, EPA's ability to advance mercury science will be limited and "utility-attributable" hotspots that pose health risks may occur and go undetected.

Based on our interpretation of CAMR, EPA could not take action to mitigate a mercury hotspot unless the Agency first determined that the hotspot was solely "utility-attributable." Therefore, EPA could not require additional utility emission reductions if utilities contributed significantly, but not solely, to a mercury hotspot. This could limit EPA's ability to mitigate human health hazards by reducing potentially harmful levels of mercury in waterbodies and fish tissue. This could also limit EPA's ability to reduce the number of waterbodies with fish consumption advisories.

What We Recommend

We recommend that EPA develop and implement a mercury monitoring plan to (1) assess the impact of CAMR, if adopted, on mercury deposition and fish tissue; and (2) evaluate and refine mercury estimation tools and models. Further, if CAMR is adopted after the rule reconsideration process is complete, we recommend that EPA clarify in the final rule that the "utility-attributable" hotspot definition does not establish a prerequisite for making future revisions to CAMR. In response to the draft report, the Agency agreed that additional mercury monitoring is needed and explained that CAMR does not establish the "utility-attributable" hotspot definition as a prerequisite for future changes to CAMR.