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EPA Reports Findings on Mercury Emission Studies

In December 2000, the U.S. Environmental Protection Agency (EPA) announced plans to eventually control power-plant emissions of mercury, based upon results of an extensive study the agency conducted. Currently, regulations have not been created, though the EPA will propose them by 2003 and issue final rules by 2004, according to an EPA press release.

The study—required by the Clean Air Act—was initiated in order to determine whether regulations were needed on power plant emissions and if those emissions posed significant hazards to human health. A 1998 EPA report to Congress concluded that mercury posed the greatest concern of all toxic pollution examined.

The EPA determined that roughly 60 percent of the total mercury deposited in the United States came from air-emission sources. Studies showed that the largest source of emitted human-made mercury pollution in the United States was from coal-fired power plants, which were estimated to emit about 43 tons yearly.

Mercury emitted into the air from power plants is often deposited into water bodies, where biological processes can then transform it into highly toxic methylmercury that can build up in animal and human tissues.

Humans are primarily exposed to methylmercury after consuming contaminated saltwater or freshwater fish, causing both neurological and developmental damage. People who regularly and frequently eat highly contaminated fish (or large amounts of moderately contaminated fish) and women of childbearing age are the most likely to be at risk from mercury exposure.

Findings from the study also indicated that potential strategies for controlling mercury and other hazardous air pollutant emissions could include the use of precombustion controls (fuel switching, coal switching, coal cleaning) and combustion modification methods used to control NOx emissions.

Additionally, flue gas cleaning technologies used for controlling emissions of criteria pollutants and hazardous air pollutants might also be considered, as well as non-traditional controls such as demand side management and energy conservation¹. As part of developing regulations, the effectiveness and cost of controls will be examined along with the level(s) of control that may be technically feasible².

With EPA-mandated mercury emission regulations on the horizon, industry will face compliance by implementing control methods. As such, raw materials at the front end will likely undergo intense analysis in order to classify them by their mercury levels.

LECO's AMA254 Advanced Mercury Analyzer accurately determines trace amounts of mercury, therefore complying with EPA Method 7343 (Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry) and ASTM Methods—which are pending—for coal and combustion residues.