



Connecticut Bureau of Air Management, Anne Gobin, Acting
Maine Bureau of Air Quality Control, James Brooks
Massachusetts Bureau of Waste Prevention, Barbara Kwetz
New Hampshire Air Resources Division, Robert Scott
New Jersey Division of Air Quality, William O'Sullivan
New York Division of Air Resources, David Shaw, Acting
Rhode Island Office of Air Resources, Stephen Majkut
Vermont Air Pollution Control Division, Richard Valentinetti

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Contact: Cindy Drucker
(617) 367-8540

Northeast States New Report Shows Over 90% Reduction

In Power Plant Mercury Emissions Is Achievable

EPA Should Adopt Strict MACT Standard Without Delay

November 4, 2003 (Boston, MA) – Toxic mercury emissions from power plants could be reduced by over 90 percent – from 48 tons annually down to only 7 tons annually – through a combination of benefits achieved from existing air pollution controls and utilization of commercially available mercury reduction technologies – according to a new report issued today by Northeast States for Coordinated Air Use Management (NESCAUM). The new report from NESCAUM, a non-profit association of air quality agencies of the Northeast states, entitled “*Mercury Emissions from Coal-Fired Power Plants: The Case for Regulatory Action*,” coincides with US Environmental Protection Agency’s (EPA) requirement to establish a standard for mercury emissions from coal-fired power plants by mid-December.

The Clean Air Act requires that EPA establish a Maximum Achievable Control Technology (MACT) “floor” that is based on the average emissions reductions achieved by the top 12 percent of power plants for which EPA has data. If these boilers are ranked according to the percent reduction achieved, the average of the top 12 percent is a 91 percent reduction from the mercury in the combusted coal. Mercury is widely recognized as a potent neurotoxin. Mercury emissions from coal-fired utility plants – the largest source of mercury – are not currently regulated.

Ken Colburn, Executive Director of NESCAUM stated, “The ‘quicksilver’ lining is that the technology exists to achieve dramatic mercury reductions – without undue economic burden. Our analysis shows that when all sources and coal types are considered, a 90 percent average reduction is clearly doable. By proposing a stringent mercury control rule now, EPA can provide the certainty business needs and spur market forces to protect public health.” NESCAUM’s report is available at www.nescaum.org.

In 1994, environmental groups sued EPA for failure to issue the mercury emissions reductions standards in compliance with the Clean Air Act. After nearly a decade’s delay, EPA is now required by a court-approved settlement agreement to issue proposed regulations limiting the mercury emissions of power plants on a national basis by December 15, 2003 and to issue final regulations by December 15, 2004.

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In light of the slow pace of federal activity, states have begun to set their own limits on mercury emissions from new and existing power plants. Connecticut, Iowa, Massachusetts, New Jersey, and Wisconsin are among the states that have already concluded that emissions reductions from all boilers and coal types are achievable in an effective, timely and economical way. For example, the state of Connecticut has enacted legislation that requires existing power plants to meet a 90 percent mercury removal efficiency. The Commonwealth of Massachusetts has proposed regulations that require a 95 percent removal efficiency. Colburn added, “The existence of stringent state standards raises a serious question as to how a weak federal standard could ever be justified.”

Barbara Kwetz, Air Quality Director of Massachusetts and current Chair of NESCAUM, stated, “Massachusetts has proposed the most stringent mercury controls in the nation, that will ultimately achieve a 95 percent mercury removal efficiency from our power plants, equivalent to an 85 percent decrease from the current level of power plant mercury emissions. We hope that EPA will follow our lead.”

Bill O’Sullivan, Air Quality Director of New Jersey who also served on EPA’s Utility MACT Working Group, stated, “NESCAUM’s report substantiates some of the Working Group’s findings that mercury emissions reductions of over 90 percent are clearly achievable.”

Decades of experience show that stringent regulations are necessary to encourage innovation and commercialization of new technologies. This leads to dramatically decreased compliance costs. David Foerter, Executive Director, Institute of Clean Air Companies, an association of clean air technologies companies, noted, “Failure by EPA to establish an effective standard could lead to a plethora of differing regulations on the state and local level. The Clean Air Act was meant to create a level playing field that provides public health protection through consistent national regulation and creates certainty for private sector planning and investment purposes.”

NESCAUM’s report highlights three key classifications of mercury emissions controls:

- *Co-Benefits of Existing Pollution Controls*
All coal-fired power plants have at least some air pollution control devices for controlling the emissions that contribute to acid rain, ozone and soot (e.g., sulfur dioxide, oxides of nitrogen, and particulate matter). The NESCAUM report provides evidence that, with respect to all coal types, existing control devices designed to control these other pollutants often deliver simultaneous substantial mercury reductions – so-called “co-benefits.” Some plants burning bituminous coal have obtained mercury reduction co-benefits of 98 percent; for subbituminous coal, co-benefits of over 70 percent have been documented using these non-mercury-specific controls. In this regard, co-benefits alone will allow some plants to meet a stringent mercury standard – even without attempting to optimize controls to achieve mercury reductions.
- *Technology Transfer*
The NESCAUM report highlights the fact that the application of activated carbon injection (ACI) technology – currently used in most municipal waste combustors (MWC) to achieve mercury emissions reductions of greater than 90 percent and as high as 99 percent in some cases – is largely a matter of traditional technology transfer to coal-fired boilers. In fact, there have been a number of successful pilot and full-scale demonstration projects that prove the transferability of this technology.

Due to the commercial availability of ACI technology, several states, such as Connecticut, Massachusetts, New Hampshire and New Jersey, have promulgated standards that are almost three times more stringent

than the federal standard for mercury emissions from MWCs. While there are differences between MWCs and power plants, transferring this technology to coal-fired power plants – even without new technology breakthroughs – is likely to achieve similar mercury reductions.

- Emerging Technologies
Advanced mercury-specific control technologies are well on their way to commercial availability. The results indicate that a mercury control efficiency of over 90 percent is feasible for power plants, at costs comparable to reducing NO_x under the federal ozone program. The NESCAUM report details technologies closest to commercial availability, including ACI, enhanced wet scrubbing, K-Fuel® technology, and Powerspan ECO™ technology, and describes successful applications throughout the country. These technologies include a range of innovative approaches, including cleaning coal prior to use and post-combustion controls that create useful by-products.

Mercury in the U.S.

In the U.S., coal-fired power plants are the largest unregulated source of mercury emissions and are responsible for approximately 40 percent of the country's industrial emissions. EPA estimates that roughly two-thirds of all mercury deposited in the U.S. comes from domestic sources and that U.S. power plants account for about one-third of the mercury deposited in the country.

The proportion of U.S. mercury emissions attributable to coal-burning power plants is increasing, both because of increased energy production and because of reductions in mercury emissions from other industry sectors. Moreover, mercury emissions from coal-fired power plants are expected to increase based on projections of energy production and coal use, absent any state and federal actions to require mercury emission reductions.

While mercury is widely known as a potent neurotoxin posing a particularly serious health threat to infants and young children, there are currently no federal requirements limiting mercury emissions from utility boilers – the largest source of mercury emissions related to human activity in the U.S. Estimates show that eight percent of US women of child-bearing age had levels of mercury in their blood above levels known to cause fetal damage. Public health impacts of mercury include impairment of children's fine motor, language, visual-spatial and verbal memory skills, and adverse cardiovascular and immune system effects in infants and young children.

Kwetz added, "Adequate protection of public health is clearly on the line here. It's been over a decade since EPA was required to set a mercury emissions standard. EPA simply can't ignore the fact that the standard is both necessary and achievable today."

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Note: A September 2000 report by NESCAUM entitled "*Environmental Regulation and Technology Innovation: Controlling Mercury Emissions from Coal-Fired Boilers*" highlights, through a series of detailed case studies, how pollution-control requirements spark the rapid development and installation of new control technologies. NESCAUM's report shows that technologies to dramatically reduce mercury emissions from power plants can be rapidly, and economically, deployed if required by EPA.