

[NOTE: The deadline for submittal of comments has been extended from April 14 to May 5, 2008]

Factsheet on Mercury Public Health and Welfare Finding

Wisconsin Department of Natural Resources
Bureau of Air Management
Revised April 2008

What is the Mercury Finding?

The Department of Natural Resources has made a preliminary finding that a revised mercury emission standard for coal-fired electrical generating units is necessary to provide adequate protection of public health and welfare from the mercury risk in Wisconsin. The Finding supports the proposed standard with conclusions based on scientific research and technical analyses of mercury emissions sources, exposures, health effects, control options and comparisons to standards in neighboring states. The Finding summarizes the scientific and technical basis for the proposed standard. Comments on the preliminary Finding are being accepted through May 5, 2008 as part of the mercury emission reduction rules package. A public hearing on the proposed rule is scheduled for April 7, 2008.

Why is the Mercury Finding necessary?

There is a statutory requirement (s. 285.27(2)(b), Wis. Stats.) to provide written documentation to support a finding that a standard is needed to provide adequate protection of public health and welfare, in the absence of a federal standard. Under the statutes, there are four elements which must be included in the written documentation to support the Mercury Finding:

- 1) Identify sources of mercury emissions and populations potentially at risk;
- 2) Assess whether exposures to mercury are above a level of concern;
- 3) Evaluate options to control risks from mercury emissions exposures;
- 4) Compare mercury emission standards proposed with those from neighboring states.

What are sources of mercury emission and the populations potentially at risk identified by the Finding?

Wisconsin air emission inventory data indicates that three major types of stationary sources are responsible for mercury air emissions in the state:

1. Coal-fired power plants.
2. ERCO Worldwide chlor alkali facility in Port Edwards.
3. Industrial coal-fired power boilers.

Coal-fired power plants in Wisconsin currently account for 62.5% of stationary source mercury emissions. After a planned conversion in 2010 to a mercury-free process at ERCO Worldwide (chlor-alkali plant), coal-fired power plants will account for 86% of total mercury air emissions.

The Wisconsin Department of Health and Family Services (DHFS), federal governmental organizations and institutions have identified women of child-bearing age, infants and children as the populations at greatest risk from elevated mercury exposure. A study of Wisconsin women estimated that about 6% of women who are childbearing age had elevated mercury levels. A survey conducted by the Wisconsin DHFS in 1999 found that more than 90% of Wisconsin women between the ages of 18 and 45 include fish in their diets and approximately one-third of them consume sport-caught fish.

What are the major points in the Finding's assessment of whether exposures to mercury are above a level of concern?

Health effects experts worldwide have identified the reduction of mercury exposures as a major public health goal. A 2005 survey of mercury concentrations in hair in Wisconsin residents showed that 29% of men and 13% of women had mercury levels above 1 part per million (ppm), which is the level of concern for adverse effects determined by United States Environmental Protection Agency (U.S. EPA). It is estimated that approximately 437,000 men and women in Wisconsin are exposed to mercury above the safe level established by the U.S. EPA.

The health risks include developmental effects such as lower performance on language, attention and memory tests and adverse effects in vision and motor functions. Recent research has also identified mercury effects on the immune system and a potential role of mercury exposure in elevating the risks of heart attacks in adults.

What are the Finding's conclusions about options to control risks from mercury emission exposures?

Establishing a mercury emission standard for coal-fired power plants to protect public health and welfare is the most effective option since these plants are the stationary sources that account for the majority of mercury air emissions in Wisconsin. Emission control technologies are commercially available to reduce mercury releases from the types of coal-fired power plants operating in Wisconsin. Additional technologies, suitable for commercial application, will be available within the next seven years.

The costs of mercury control technologies applicable to coal-fired power plants found in Wisconsin are reasonable and cost-effective in comparison to the costs to control conventional pollutants, including particulate matter, nitrogen oxides and sulfur oxides, from coal-fired power plants. Multipollutant approaches are preferred because environmental and public health benefits can be achieved at lower costs.

What are the major points in the Finding's comparison of the proposed mercury emission standards with those from neighboring states?

Among neighboring states, Illinois, Michigan and Minnesota are proposing or have adopted requirements more stringent than Wisconsin's current rule affecting coal-fired power plants. Under the proposed rule, Wisconsin, like Illinois, Michigan and Minnesota, is requiring large coal-fired power plants to achieve a 90% reduction based on mercury in coal combusted. Dates by which compliance with this mercury emission standard is required varies from 2009 to 2021. In part, this variation can be attributed to the availability of multipollutant reduction options that extend the mercury reduction compliance date in exchange for reductions in sulfur dioxide and nitrogen oxide. Wisconsin, like Illinois and Michigan, will include mercury emission standards for new coal-fired power plants.

What is the process for the Finding?

The Finding will accompany the draft mercury emissions reduction rule package. A public hearing on the Finding and the draft rule package will be held on April 7, 2008. Public comments on the Finding will be accepted through May 5, 2008 as part of the public hearing and public comment period. The Finding will accompany the proposed rule to the May 2008 meeting of the Natural Resources Board, which will consider adoption of the rule.

FOR MORE INFORMATION, CONTACT: Jon Heinrich, DNR Bureau of Air Management, (608) 267-7547

For more information about mercury and health effects and fish consumption:
Wisconsin Fish Consumption Advisories <http://dnr.wi.gov/fish/consumption/>

Wisconsin DHFS “Eating Safe Fish” <http://dhfs.wisconsin.gov/eh/Fish/index.htm>
U.S. EPA’s Health Effects of Mercury <http://www.epa.gov/mercury/effects.htm>

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