

# Before The State of Wisconsin Department of Natural Resources

REVISION AND ADOPTION OF RULES  
TO GOVERN THE RELEASE OF MERCURY  
EMISSION TO THE AIR (NR 446) FROM  
COAL-FIRED ELECTRIC GENERATORS  
AND REQUIRING REDUCTIONS OF THOSE  
EMISSIONS TO MINIMIZE MERCURY  
DEPOSITION TO WISCONSIN LAKES AND RIVERS

AM-32-05

TO: Jon Heinrich  
Department of Natural Resources  
Bureau of Air Management  
P.O. Box 7921  
Madison, Wisconsin 53707

Clean Wisconsin and Sierra Club very much appreciate the opportunity to submit these comments on the Department's proposed changes to NR 446, mercury regulations for power plants. We strongly urge the Department to adopt the reduction requirements contained in "option 2" as described in the April 10, 2007 hearing notice issued by the Department. That option would require all coal-burning electric generating units to achieve a 90 to 95 percent reduction of mercury emissions by January 1, 2012. We also strongly urge the Department to reject EPA's interstate trading program, as so many other states have. A 90 to 95 percent reduction of mercury emissions will reduce mercury in Wisconsin's environment and protect public health better than any of the other proposed options.

## **Advances in Control Technology and the Problem with EPA's Rule**

As described in the citizen's petition, there have been tremendous advancements in the development of control technology since NR 446 was initially promulgated. By enhancing mercury removal for western coals with the use of halogens (Cl, Br, F, I) researchers quickly obtained results at or above 90 percent with PRB coal. For example, long-term results at the Meramec plant with DARCO Hg-LH achieved an average mercury removal of 93 percent efficiency with a sorbent injection of 3.3 lb/MMacf and average mercury emissions of .44lb/TBTU.

The best example is in our own backyard. At the recent 8<sup>th</sup> International Conference on Mercury as a Global Pollutant held in Madison, DOE/NETL and WE Energies reported initial results from the Presque Isle Power Plant demonstration project that show 90 and 95 percent mercury reductions with 2 and 3 lb/MMacf of carbon injection respectively on boilers burning subbituminous coal with a hot-side ESP. Using the EPRI TOXECON configuration less than one percent of the fly ash is contaminated allowing for maximum beneficial reuse. Clearly, if initial tests are getting these results, with further refinement a 90 percent reduction is a very reasonable expectation at plants that burn sub-bituminous coal with the ESP particulate control technology widely employed on Wisconsin plants.

EPA's rule is fatally flawed in several ways and the DNR not only should not be compelled to mimic it, but does so at the peril of Wisconsin's children and resources. First, 16 states have joined a lawsuit filed against EPA because it was developed illegally in light of EPA's own analysis determined that mercury is a toxic pollutant that needs to be regulated under Section 112 of the Clean Air Act. Regulating it under Section 111 to allow an interstate cap and trading scheme clearly violates the Clean Air Act and results in a rule that will not be protective of public health. Both the U.S. Government Accountability Office (GAO) and the U.S. EPA Office of Inspector General (OIG) were very critical of the EPA rule development process as we detailed in the citizen petition.

The DNR is required by state law to adopt mercury rules based on health standards, see Attachment 1 – Memo from David Bender to Wisconsin Environmental Leaders. Mercury is a potent neurotoxin that accumulates in our environment and in the bodies of Wisconsin residents. As local sources of mercury are reduced, concentrations of mercury in surrounding waters also decrease. Option 2, reducing mercury emissions by 90 to 95 percent will better protect public health and the waters of Wisconsin than any of the other options. Please see supporting documentation on health effects, mercury deposition, and economic issues provided by Eric Uram.

In addition, EPA's rule is based on very out-dated data and analysis, namely the EPA Information Collection Request and early tests with mercury specific control technology. The research and development of control technology has made tremendous strides prior to and since the EPA rule development and since NR 446 was promulgated for that matter. And yet, the DNR's proposed rule revision would take a step backwards. This is true based on DNR's own assessment of EPA's rules.

The DNR submitted comments to the EPA on April 28, 2004 on EPA's proposed mercury standards as published in the Federal Register (4652) on January 30, 2004. The rules proposed by EPA at that time (under Section 111 of the Clean Air Act) are nearly identical to those eventually adopted by the EPA and the same rules that DNR is now proposing to mirror in NR 446. In those comments the DNR stated that: "the DNR does not agree with EPA's proposed mercury reduction strategy and believes that none of the three alternatives is adequate to reduce mercury to levels that are achievable and protective of public health and the environment." The DNR comments went on to state that the Department believed at that time that control technology was available to meet "a minimum 80 percent mercury efficiency for sub-bituminous coal and a minimum of 90

percent efficiency for bituminous coal,” and that “existing utility plants should be able to meet these reductions levels by the year 2015.” The DNR comments are very critical of the cap and trade approach under Section 111 and, for example, point out that “if banking and trading are allowed, the final reduction for 2018 may only be 54 percent.” As we stated earlier and in our petition, we believe that tests conducted at power plants since 2004 clearly show that a 90+ percent reduction of mercury is feasible with sub-bituminous coal as well. Clearly the Department recognized over three years ago that EPA’s approach was not adequate; and specifically not adequate to protect public health. Therefore, it follows that if the DNR intends for these revised rules to be protective of public health they must be stronger than what EPA, and in turn now the DNR, is proposing.

Further evidence that control technology has advanced and that a 90 percent reduction is possible is that fact that both Illinois and Minnesota have now required a 90 percent reduction from their coal plants. Illinois adopted a rule that requires a 90 percent reduction across all coal plants by June 30, 2009 and a 90 percent reduction at each plant by December 31<sup>st</sup>, 2012. Minnesota adopted a law requiring a 90 percent reduction by 2009 or 2014 at each plant depending on the existing PM control technology. Again, clearly these levels of control can be achieved. We should be offering our children at least the same level of protection that our neighboring states are.

Furthermore, these levels of mercury reduction can be achieved at relatively modest costs. Actual costs in full-scale demonstrations have been very promising. Even the highest cost of the control technologies demonstrated in the table below translate to a ballpark figure of about 1 percent of retail electricity costs; in other words, on the order of a \$1 increase on the average residential monthly electric bill, or an annual increase of about \$10 to \$12. In fact, the capital costs of the mercury control technologies are minuscule compared to that of other pollutants regulated under the Clean Air Act for many years. The capital costs for an activated carbon injection system for a 500 MW plant cost approximately \$1 million compared to \$150 million for selective catalytic reduction (SCR) or a scrubber for control of nitrogen oxide and sulfur dioxide respectively.

Utility	Sunflower Electric	AmerenUE	Detroit Edison
Plant	Holcomb Station Unit 1	Meramec Station Unit 2	St. Clair Station Unit 1
Coal Rank	Subbituminous	Subbituminous	Subbit/Bit blend
Existing APCD	SDA/FF	CS-ESP	CS-ESP
PAC/SEA	DARCO Hg-LH	DARCO Hg-LH	B-PAC
Average Hg removal	93%	93%	94%
Sorbent concentration	1.2 lb/MMacf.	3.3 lb/MMacf	3 lb/MMacf
Energy cost increase w/o byproduct impacts	.37 mills/kWh	.99 mills/kWh	1.06 mills/kWh
Energy cost increase with byproduct impact	1.09 mills/kWh	2.37 mills/kWh	2.05 mills/kWh

## **The “True Up” with EPA’s Rule**

There are numerous reasons why we feel that the “truing up” with the EPA rule is not in Wisconsin’s interest in protecting health and the environment. First, as mentioned above, EPA’s rule was developed illegally. Two wrongs will not make a legal “right.” Secondly, we do believe it is wise or, even legal, for one Natural Resources Board to bind a future board as NR 446.029 attempts to do. It is easy to see how if one board is allowed to bind the actions of a future board perverse and unintended consequences are possible. Just as it makes no sense for one legislature to bind a future legislature’s actions; it makes no sense for one NR Board to bind a future Board’s actions. In this regard, clearly this board has the authority to repeal NR 446.029 in this rule revision. Third, and most importantly, the DNR has admitted that the EPA rule is not adequate to protect public health and clearly the DNR is required to do everything in its power to promulgate a rule that is protective of public health.

It then follows that we don’t believe it is good public policy for this Board to attempt to require a future board 2010 to promulgate a new rule, even though we obviously support a 90 percent reduction level. The bottom line is that there is no reason why we shouldn’t require a 90 percent reduction level at this time. The utilities would benefit from the certainty for planning purposes. We urge you to follow the Governor’s stated goal of reducing mercury emissions from coal-burning power plants but making that requirement in this rule revision and requiring those reductions by 2012.

Thank you very much for this opportunity to comment on these important rule revisions. We look forward to the technical hearings scheduled by the Natural Resources Board to further review the most current data on health effects and deposition.

Sincerely,

Keith Reopelle, Program Director  
Clean Wisconsin

Jennifer Feyerherm, Associate Midwest Representative  
Sierra Club