



Wisconsin Utilities Association
44 East Mifflin Street, Suite 202
Madison, Wisconsin 53703

To: Interested Parties

From: Bill Skewes, Executive Director
Wisconsin Utilities Association

Date: June 20, 2003

Re: DNR Mercury Rulemaking

On behalf of Wisconsin's investor-owned gas and electric utilities and Dairyland Power Cooperative (DPC), the Wisconsin Utilities Association (WUA) continues to support reductions in emissions of mercury by coal-fired utility boilers, as a "bridge" to pending federal rules and/or legislation, consistent with the DNR's stated intentions.

While WUA and DPC support mercury emission reductions, the following modifications to the rule need to be made related to the timing of reductions, federal consistency, baseline determinations, credit for early reductions and recognition of specific multi-emission cooperative agreements:

- 1.) Rather than specifying the exact years in which the reductions will take place, the rule should, instead, specify the number of years between implementation of the rule and the cap and phased reductions, such as five, 10 and 15-year increments.
- 2.) Consistent with statutory provisions that federal standards will control, clarify that the rule does not apply to sources subject to federal mercury emission standards. Specify that it is in effect only in the absence of a federal MACT or other mercury regulation.
- 3.) The multi-pollutant alternative should also be available in the second phase of the rule implementation, not just the first phase and should recognize existing cooperative agreements on multi-emission reductions.
- 4.) Establish the ability to receive and bank credits for reductions that occur after the baseline period and before the rule limits are in effect and bank credits for reductions that are in excess of the rule requirements.
- 5.) Credit should be given for early voluntary reductions in the determination of baselines.
- 6.) The determination of the second phase of reduction level should not be specified. Rather, it should be established based on a review of current technology after the first phase has been achieved, in consultation with affected utilities.
- 7.) Additional revisions are needed to provide more flexibility in addressing various technical issues and to reduce administrative burdens.

I'M PETE PETROUSKE FROM ASHVAUBENON IN BROWN COUNTY. I'M ACTIVE IN THE DEPERE SPORTSMANS CLUB, GREEN BAY AREA GREAT LAKES SPORT FISHERMEN, BROWN COUNTY CONSERVATION ALLIANCE AND THE WISCONSIN CONSERVATION CONGRESS OF WHICH I AM THE SECRETARY OF THE GREAT LAKES STUDY COMMITTEE. I ALSO TEACH HUNTER SAFETY, BOW HUNTING SAFETY AND BOATING SAFETY FOR THE WISCONSIN D.N.R.

I FINALLY LEARNED TO SAY NO.

I ASK THE JOINT COMMITTEES TO RECOMMEND A 90% REDUCTION IN MERCURY POLLUTION AS A GOOD START.

IF THE FISH EATING ADVISORY IS ACCURATE, WE MUST STOP MERCURY POLLUTION. THE W.D.N.R. HEALTH GUIDE FOR EATING FISH IN WISCONSIN LISTS 42 SPECIES AND LAKES WHERE ONE MEAL A MONTH MAY BE EATEN. AND 93 ARE LISTED AS DO NOT EAT. SEE 2003 HEALTH GUIDE PAGES 13, 14, AND 15.

THE FISH ADVISORY IS THE ONLY INFORMATION AVAILABLE TO US THE TAX PAYING PUBLIC, INDICATING THE DANGER OF MERCURY POLLUTION.

WE MUST START NOW TO SOLVE THE PROBLEM, ACCORDING TO THE E.P.A.

COAL-FIRED POWER PLANTS ARE THE BIGGEST SOURCE OF MERCURY EMISSIONS IN THE ~~UNITED~~ UNITED STATES.

POLLUTION SHOULD BE MEASURED FROM WHAT IS COMING OUT OF THE POWER PLANT SMOKE STACKS, NOT FROM THE MERCURY THAT IS IN THE COAL.

MAYBE OUR GRANDCHILDREN WILL BE ABLE TO EAT AND ENJOY LOW OR NO MERCURY POLLUTED FISH WHEN THEY ARE OUR AGE. IT IS TOO LATE FOR PEOPLE OUR AGE. SO, LETS START NOW TO PROVIDE IMPROVEMENTS FOR SAFER FOOD FOR OUR CHILDREN.

THANK YOU

Pete Petroube

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HELLO, I'M RON VANDER LOOP, PRESIDENT
OF THE BROWN COUNTY CONSERVATION
ALLIANCE.

WE WERE ONE OF THE ORIGINAL
PETITIONERS TO THE DNR IN THE YEAR
2000 TO WRITE RULES TO REDUCE
MERCURY POLLUTION. WE ASKED FOR
A 90% MERCURY REDUCTION FROM
CURRENT EMISSIONS BY THE YEAR 2010

THE 90% REDUCTION IS STILL
OUR GOAL.

I BELIEVE COAL BURNING POWER
PLANTS SHOULD CONTINUE TO BE A

LARGE SOURCE OF ELECTRICITY. THEY
WILL LIKELY ALWAYS PRODUCE
ELECTRICITY CHEAPER THAN GAS.

ESPECIALLY IF THEY WOULD HAVE
TO PAY THE SAME UNIT PRICE
AS OUR HOMEOWNERS AND
SMALL BUSINESS PEOPLE,

WE ALL KNOW THE DAMAGE
TO HEALTH AND THE ENVIRONMENT
THAT MERCURY UNCHECKED CAN DO.

DON'T BE AFRAID TO BE THE
FIRST STATE TO PUSH LEGISLATION
FOR ~~STRICT~~ STRICT RULES.

MANY YEARS AGO WISCONSIN WAS THE FIRST STATE TO PASS A LAW BANNING THE USE OF ARSENIC IN SPRAYING TREES AND VEGETATION BECAUSE OF HEALTH RISKS.

WE WERE TOLD WE NEEDED PHOSPHATES IN OUR LAUNDRY SOAP SINCE THEY WERE BANNED BECAUSE OF HEALTH RISKS; OUR CLOTHES ARE CLEAN AND AT LESS COST.

THE IDEA ALONE OF TELLING PEOPLE WHO SHOULD AND SHOULD NOT EAT FISH FROM OUR WATERS IS ENOUGH OF A RED FLAG TO STOP WHAT WE ARE DOING AND CHANGE THE SITUATION.

THANK YOU

THE IDEA OF 60-65% CLEANUP IS NOT ACCEPTABLE



A Division of the Wisconsin Federation of Cooperatives

NR446

131 West Wilson Street, Suite 400 • Madison, WI 53703 • Phone (608) 258-4400 • FAX (608) 258-4407

**Statement of David Hoopman
Wisconsin Federation of Cooperatives
to
Assembly Committee on Natural Resources
Senate Committee on Environment and Natural Resources
Concerning Clearinghouse Rule 01-081, Control of Mercury Emissions
August 13, 2003**

There is much confusion on all sides, as to the practical meaning of the rule before you today, NR446. Many people think opposing this rule is the same as opposing reduction of environmental mercury. That's not the case. Many think supporting this rule is the same as supporting an 80 percent reduction of mercury in Wisconsin lakes. Unfortunately, neither is that the case. Very little reduction of mercury in Wisconsin waters would be likely to result from this rule, or for that matter, from a more aggressive one.

Let me put it in somewhat plainer English: It is highly improbable that any major reduction would result, even if we simply ended coal-fired electric generation in this state. The utility industry has computer modeling that predicts this, and more importantly, so do the regulatory agencies in Wisconsin and three nearby states.

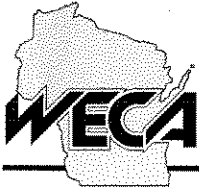
It's impossible to evaluate the need for NR446 without first examining the huge difference between the expectations that have been raised and reality.

On one hand, people are told to fear for their children's health when in fact the risk of real danger is known to be remote. On the other hand, people have been encouraged to believe real environmental improvement will result from adopting NR446, even though its effect on the chief object of our concern, that is, the mercury content of fish eaten by people, is overwhelmingly likely to be so slight as to be unknowable. I feel completely confident that NOBODY who has worked on this rule really believes it will significantly reduce the mercury levels measured in Wisconsin fish. The Department of Natural Resources won't risk claiming this rule will end a fish consumption advisory on any lake. In fact, I suspect there may be no major disagreement between me and the Department concerning the net effect of applying NR446. Where we may part company is that I don't believe the fish are dangerous to eat until you reach quantities reasonable people would regard as at least extraordinary. The lengthiest medical study yet performed on this subject bears me out on that.

There is another aspect to the idea of fish consumption advisories not being lifted, that deserves much closer examination than it's received thus far, because it can tell us so much about the validity of this whole project. Here's what it boils down to: If the advisories are to be taken seriously, then we have to ask ourselves whether they can ever be lifted no matter what happens to power plant emissions. Because there has always been mercury in our lakes. It was there before there were power plants. It was there before there was industry. It was there before there were European settlers in North America. And sediment cores taken from lake bottoms in Minnesota give us reason to believe that if today's standard for issuing health advisories had been in place, people might have been getting warnings about eating walleyes before the Civil War.

As providers of electric power, we recognize an obligation to have the least impact on the environment we can achieve, consistent with performing our primary mission reliably and at reasonable cost. We hope state government will recognize a parallel obligation, to avoid imposing regulatory costs on consumers unless the regulations can be reasonably expected to deliver significant benefit. We don't believe NR446 would pass that test. We are highly doubtful NR446 will affect the safety of our food to an extent that's detectable, much less beneficial. Therefore, we would respectfully ask that these committees object to the rule.

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A Division of the Wisconsin Federation of Cooperatives

131 West Wilson Street, Suite 400 • Madison, WI 53703 • Phone (608) 258-4400 • FAX (608) 258-4407

Testimony of David Jenkins

Manager-Wisconsin Electric Cooperative Association

To the Assembly Committee on Natural Resources and the Senate Committee on Environment and Natural Resources

Re: Clearinghouse Rule 01-081, Relating to Mercury Emissions

August 13, 2003

Chairman Kedzie and Chairman Johnsrud and Committee Members:

I would like to cite four additional concerns and comments of the proposed rule, in addition to the ones Dave Hoopman raised.

1) Venue

The U.S. EPA is currently under a court order to commence rulemaking on a federal mercury rule no later than December 15, 2003, and to complete that rule within a year. We believe the federal level is the proper venue for this. Atmospheric mercury is carried by winds between and among states. This rule would single out Wisconsin generators alone and do nothing about emissions from power plants just across the river in Minnesota and Iowa and other states.

2) Public Health Documentation

We have no credentials with respect to medical or public health matters. When issues of public health arise, we consult medical professionals and the state Department of Health and Family Services. When we called them asking about the frequency of mercury poisoning and other mercury related disorders in Wisconsin, they told us they do not keep records of such things. So, we consulted the state health plan, produced by the DHFS. Here it is. The word mercury does not appear in the document, intended to guide our state's health policy until the year 2010.

3) PSC Letter

It is unusual for a major agency to completely and unreservedly criticize a rule from another agency. But, exactly that has occurred with this rule. In a letter to the DNR the PSC has indicated that this rule would produce "...insignificant environmental and public health benefits" and would present "unacceptable future impacts on the state's electric supply portfolio".

4) Differing Cost Estimates

We believe the estimates that the DNR has made in its document entitled Mercury control and Cost for Major Utilities are inaccurate. We understand that for most of our distribution members, the bill impact on an ordinary consumer in the first phase of this rule will be 5%, or about \$4.50/month—not \$6.00 a year as the department estimates.

However, rather than argue about whose numbers are right, we have two alternative suggestions to resolve this:

- A) If the cost of any utility or cooperative's compliance with the rule exceeds 150% of the DNR estimate of the cost, that utility or cooperative is granted a waiver from the rule. I am sure that the DNR is confident that its numbers are correct, and should not shy away from defending the accuracy of its numbers by opposing this suggestion.
- B) Alternatively, an independent reviewer, such as the Legislative Audit Bureau, could be instructed to carefully review the utilities' and the DNR's cost estimates and prepare estimates that are objective and credible. This is exactly what the Public Service Commission ordered the American Transmission Company to do in the Duluth-Weston Transmission Line Case. The public interest was served by having this review conducted.

Most importantly our members and utility ratepayers deserve to have these questions answered and issues resolved before being asked to pay for this.

We have given committee staff a list of our exhibits and copies of them.

We ask that the committees object to this rule.

Mr. Chairmen and committee members thank you for the opportunity to testify.

**ROBERT GARVIN
COMMISSIONER, PUBLIC SERVICE COMMISSION OF
WISCONSIN
SENATE NATURAL RESOURCES & ASSEMBLY NATURAL
RESOURCES COMMITTEE
AUGUST 13, 2003**

I. INTRODUCTION

THANK YOU FOR GIVING ME THE OPPORTUNITY TO TESTIFY TODAY. MY NAME IS BERT GARVIN AND I AM COMMISSIONER AT THE PUBLIC SERVICE COMMISSION.

I AM TESTIFYING TODAY FOR INFORMATIONAL PURPOSES ONLY. THE COMMISSION HAS NOT ADOPTED A POSITION IN SUPPORT OR IN OPPOSITION TO THESE PROPOSED RULES. AS A RESULT, I AM TESTIFYING TODAY REPRESENTING MY OWN VIEWS—NOT THE OFFICIAL POSTION OF OUR COMMISSION.

FIRST, LET'S ALL AGREE WITH THE GOAL. I'M SURE EVERYONE HERE SHARES THE GOAL OF THIS RULE. REDUCING MERCURY LEVELS IN OUR AIR AND IN OUR LAKES. INCREASED MERCURY LEVELS IN OUR LAKES AND AIR IS A REAL ENVIRONMENTAL AND HUMAN HEALTH PROBLEM. WE ARE ALL TOO FAMILIAR WITH THE NUMEROUS FISH CONSMPTION ADVISORIES IN OUR LAKES ISSUED IN RECENT YEARS...MERCURY HAS BEEN LINKED TO HEALTH PROBLEMS WITH PREGNANT WOMEN AND LUNG DAMAGE AND NUROLOGICAL PROBLEMS IN CHILDREN...

WHILE I APPRECIATE THE DNR'S WELL-INTENTIONED EFFORTS TO LEAD THE WAY AND TAKE STEPS TO DESIGN RULES THAT WILL REDUCE THE EMISSIONS OF MERCURY FROM COAL-FIRED GENERATION, I AM HERE TODAY TO OFFER SOME CONSTRUCTIVE CHANGES TO IMPROVE THE RULE AND OFFER SOME PRACTICAL OBSERVATIONS AS A

REGULATOR TASKED WITH SETTING RETAIL ELECTRIC RATES IN WISCONSIN.

THIS RULE ATTEMPTS TO TACKLE A GLOBAL ENVIRONMENTAL PROBLEM BY ESTABLISHING A VERY AGGRESSIVE TIMETABLE FOR COAL-FIRED GENERATORS IN WISCONSIN TO REDUCE THE MERCURY EMISSIONS.

DOES THIS CURRENT RULE MAKE SENSE FOR WISCONSIN CONSUMERS? THE SHORT ANSWER IS NO UNLESS THE RULE CAN BE SUBSTANTIALLY MODIFIED” (1) TO MAKE EXPLICIT THAT THEY ARE MERELY A TRANSITIONAL STEP OR BRIDGE TO A PENDING FEDERAL RULE AIMED AT REDUCING MERCURY; AND (2) TO CODIFY A MORE MODEST AND ACHIEVABLE REDUCTION IN MERCURY EMISSIONS OVER THE NEXT DECADE (IE. 40%--NOT 80% BY 2015).

II. PRACTICAL PROBLEMS UNDERLYING THE RULE

IN MY VIEW, ANY EFFORT TO ESTABLISH A STATE-BASED MERCURY PROGRAM FACES A NUMBER OF PRACTICAL PROBLEMS THAT I WOULD LIKE TO BRIEFLY TOUCH UPON.

PRACTICAL PROBLEM NO. 1—THE RULE ESTABLISHES AN AGGRESSIVE GOAL (CALLING FOR A 80% REDUCTION AND TIMELINE (TWELVE YEARS) FOR REDUCING MERCURY EMISSIONS AT A TIME WHEN THERE ARE NO COMMERCIALY AVAILABLE TECHNOLOGIES FOR CONTROLLING MERCURY FROM COAL-FIRED PLANTS. IN OTHER WORDS, THERE ARE NO VENDORS THAT ARE CURRENTLY OFFERING MERCURY REDUCTION SYSTEMS THAT ARE SUPPORTED BY GUARANTEES FROM THE VENDOR FOR MERCURY CONTROL PERFORMANCE UNDER ALL THE CONDITIONS THAT AN ORDINARY PLANT IS EXPECTED TO ENCOUNTER DURING ITS NORMAL OPERATING CONDITIONS.

CURRENTLY, THERE IS NO SINGLE BEST TECHNOLOGY THAT CAN BE APPLIED BROADLY TO CONTROL MERCURY EMISSIONS AT BASELOAD OR INTERMEDIATE COAL-FIRED PLANTS. THERE ARE COMBINATIONS OF AVAILABLE CONTROL METHODS THAT MAY BE ABLE TO PROVIDE REDUCTIONS FOR SOME PLANTS BUT NOT FOR OTHERS DEPENDING ON WHAT TYPE OF COAL IS BURNED...IN ADDITION, NUMEROUS REPORTS SUBMITTED TO CONGRESS THAT PROVIDE AN EXHAUSTIVE REVIEW OF TECHNOLOGICAL OPTIONS AND THEIR ASSOCIATED FINANCIAL IMPACT RANGING FROM ACTIVATED CARBON INJECTION, WET SCRUBBER TECHNOLOGY, SELECTIVE CATALYTIC REDUCTION (SCR) TECHNOLOGY, AS WELL AS A HOST OF OTHER POTENTIAL OPTONS. BUT AGAIN THIS TECHNOLOGY IS IN ITS INFANCY.....AND A PILOT MAY NOT AT ALL REFLECT THE RESULTS OF A BASELOAD OR INTERMEDIATE PLANT OPERATING UNDER A VARIETY OF CONDTIONS...

PRACTICAL PROBLEM NO. 2. THERE IS NO SHOWING AT ALL THAT THE ADOPTION OF A STATE BASED MERCURY PROGRAM CAN ADDRESS IN ANY MEANINGFUL WAY THE GLOBAL ENVIRONMENTAL PROBLEM WE FACE FROM RISING MERCURY LEVELS IN WISCONSIN LAKES...

I UNDERSTAND THAT ELECTRIC POLICY RESEARCH INSTITUTE (EPRI)AND ENVIRONMENTAL PROTECTION AGENCY (EPA) ARE ENGAGED IN RESEARCH THAT ATTEMPTS TO QUANTIFY THE NET EFFECT ON HUMAN HEALTH FROM REDUCTIONS ON EMISSIONS FROM US COAL FIRED POWER PLANTS (NATIONALLY).

EPRI JUST PUBLISHED THEIR INTIAL FINDINGS. THE RESULTS INDICATE THAT A MAJORITY, AROUND 70% OF THE MERCURY FALLING ON THE U S. IS FROM SOURCES OUTSIDE THE U.S. MORE IMPORTANTLY, UTILITY EMISSIONS ARE ESTIMATED TO CONTRIBUTE LESS THAN

8% OF THE MERCURY DEPOSITION IN THE U.S. IN WISCONSIN, OTHER SPEAKERS WILL TESTIFY THAT THIS AMOUNT IS MUCH SMALLER (IE. 1-4%).

THESE STUDIES ARE SIGNIFICANT BECAUSE IT SHOWS THAT REDUCING MERCURY EMISSIONS FROM WISCONSIN COAL-FIRED GENERATION MAY HAVE A LIMITED IMPACT ON THE AMOUNT OF MERCURY DEPOSITION IN WISCONSIN LAKES FOR THE ONE SIMPLE REASON—MOST OF THE MERCURY FALLING INTO WISCONSIN LAKES COMES FROM SOURCES OUTSIDE WISCONSIN.

PRACTICAL CONCERN NO. 3. THE THIRD AND THE LARGEST PRACTICAL CONCERN....IE. THE BIG UNKNOWN...IS THE EFFECT OF THIS PROPOSED RULE ON CUSTOMER'S ELECTRIC BILLS. IN MY VIEW, THE PRICE TAG FOR THIS TYPE OF SYMBOLIC MEASURE IS SIMPLY TOO HIGH FOR WISCONSIN CONSUMERS.

THE NEXUS BETWEEN THIS PROPOSED RULE AND ECONOMIC IMPACTS ON CONSUMERS IS NOT A POLITICAL EXERCISE...IT IS A VERY REAL ISSUE FOR THOSE WHO WILL BE AFFECTED BY THE PROPOSED RULE AND REGULATORS LIKE ME WHO WILL BE ASKED TO PASS THROUGH THESE COSTS OF THIS PROGRAM ON TO CUSTOMERS BILLS....

ONCE IMPOSED, THIS PROPOSED REGULATION (HOWEVER SYMBOLIC) WILL RESULT IN UTILITIES INVESTING A LOT OF RATEPAYER MONEY INTO THE TREMENDOUS CAPITAL EXPENSES FOR THE INSTALLATION OF SPECULATIVE EMISSION REDUCTION TECHNOLOGIES. THIS RULE, IF PROMULGATED, WOULD HAVE AN ADVERSE IMPACT ON A GENERATOR'S ABILITY TO PROVIDE LOW-COST RELIABLE ELECTRICITY TO THEIR RESIDENTIAL, INDUSTRIAL AND COMMERCIAL CUSTOMERS.

WHILE WE HAVE GAINED A BETTER UNDERSTANDING OF THE COSTS TO ABATE NOX AND SO2 IN WISCONSIN, OUR UNDERSTANDING OF THE REMOVAL COSTS ASSOCIATED WITH MERCURY IS IN ITS INFANCY. I DON'T BELIEVE IT IS SOUND PUBLIC POLICY TO SIMPLY IMPOSE AN 80% REDUCTION LEVEL IN MERCURY OVER THE NEXT 12 YEARS WITHOUT THE SAME UNDERSTANDING. IN MY VIEW, GOING AFTER A MORE MODEST GOAL OF 40% REDUCTIONS FROM WISCONSIN COAL-FIRED FACILITIES, AS TECHNOLOGY DEVELOPS, IS A BETTER APPROACH.

WISCONSIN CONSUMERS HAVE A MUCH LARGER SKIN IN THE GAME THAN OTHER STATES LIKE CONNECTICUT THAT HAVE CREATED THEIR OWN MERCURY REDUCTION PROGRAM. PSCW STAFF PROVIDED ME WITH A SUMMARY OF CONNECTICUT'S GENERATION SUPPLY PORTFOLIO...WHICH SHOWS THAT ONLY ABOUT 7% OF THEIR INSTALLED CAPACITY COMES FROM GAS. IN WISCONSIN, THAT FIGURE IS SIGNIFICANTLY HIGHER (IE. 55-58% OF INSTALLED CAPACITY). MOREOVER, OVER 70% OF THE KILOWATT HOURS IN WISCONSIN (WHAT IS ACTUALLY BURNED TO PROVIDE ELECTRICITY) COMES FROM COAL. IN OTHER WORDS, CONSUMERS IN WISCONSIN FACE MUCH HIGHER POTENTIAL COSTS FROM IMPLEMENTING THIS TYPE OF PROGRAM THAN A STATE WITH A SMALL PORTFOLIO OF COAL-FIRED GENERATION.

III. SUGGESTED MODIFICATIONS

IN LIGHT OF THE PRACTICAL CONCERNS I HAVE RAISED WITH PROMULGATING THESE RULES "AS IS"...I WOULD SUGGEST THE FOLLOWING CHANGES:

- **MAKE EXPLICIT THAT THIS RULE ONLY APPLIES DURING THE PENDENCY OF THE FEDERAL RULEMAKING DESIGNED TO CURB MERCURY EMISSIONS**
- **ELIMINATE THE 80% REQUIREMENT AND MAKE IT A GOAL....BASED ON PRACTICAL CONCERNS EXPRESSED...NO TECHNOLOGY EXISTS...THIS TYPE OF "PILOT" IS NOT THE TYPE OF EXPERIMENT THAT RATEPAYERS SHOULD BE ASKED TO FINANCE ON SUCH A BROAD SCALE....**

IV. CONCLUSION

THANK YOU, MR. CHAIRMAN. I LOOK FORWARD TO ANSWERING ANY QUESTION YOU OR THE MEMBERS OF THIS JOINT COMMITTEE MAY HAVE....



John Muir Chapter

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**IN SUPPORT of CR-01-181- Mercury Air Emissions
before the Joint Meeting of the Senate and Assembly Committees on Natural Resources.
Submitted by Caryl Terrell and Eric Uram
August 13, 2003**

Thank-you for the opportunity to present the Sierra Club's views on this important rule-making. It is well established that toxic air pollution from power plants released into the environment includes mercury emissions that methylate into a more toxic form, methylmercury, which threatens all that eat fish.

The number one threat from methylmercury is neurotoxicological effects to a mother's developing child. According to Toxicological Effects of Methylmercury released July 11, 2000 from the National Research Council (NRC) of the National Academy of Sciences (NAS);

"The population at highest risk is the children of women who consumed large amounts of fish and seafood during pregnancy. The committee concludes that the risk to that population is likely to be sufficient to result in an increase in the number of children who have to struggle to keep up in school and who might require remedial classes or special education."

The Centers for Disease Control and Prevention found that 8% of women have mercury levels in their blood that are above the EPA's safe health threshold, meaning children born to those women are at risk for mercury poisoning.

Over the last few years, in addition to such findings about the toxicity of methylmercury, the Centers for Disease Control have done random dietary surveys (National Health and Nutrition Examination Survey) and blood analyses (National Report on Human Exposure to Environmental Chemicals). The findings are; that especially in women of child-bearing years, elevated levels of mercury posing a threat to health were found to be even more prevalent in blood samples than once believed from the National dietary studies. This result expanded the year 2000 dietary estimate of 60,000 children born annually in our country with potential neurological deficits to over 300,000 children with the 2002 blood analysis.

Let's do the math. Wisconsin has about 2% of the nation's population and 2% of 300,000 is 6000. Meaning, every year about 6000 children born in Wisconsin are potentially affected by methylmercury. That's at least 6000 every year, since we haven't considered how many people in Wisconsin eat more fish than those in other states.

Prevention is the only cure; risk management is a failed effort. The American Public Health Association states that fish consumption advisories "are an imperfect tool to manage health risks from mercury exposure." Research has demonstrated that no amount of promotion can ensure that people can or will avoid keeping and eating contaminated fish.

What many trying to analyze and solve this issue fail to realize is that the only thing that will reduce the amount of mercury present in the fish is to reduce the amount of mercury that gets into a fish. Only by eating smaller and younger fish can one avoid mercury contamination.

There is no means of preparation by cleaning, cooking, or curing - like with some other fish contaminants - that will reduce the amount of mercury in the fish you eat. This creates a potential where only one meal of fish with elevated levels of mercury could harm a mother's unborn child if eaten during a critical period of development. The same holds true for wildlife.

We need act more aggressively to prevent these human and wildlife health impacts. We need a Wisconsin rule to begin regional reductions in mercury pollution while we also seek a national solution. What has been demonstrated is the most reactive fraction of mercury travels only a short distance before falling back to earth. These particulate and ionic forms of mercury are the ones that most readily transform into methylmercury. Knowing this, we stand to get the greatest measurable reductions in fish mercury levels from controlling sources closest to Wisconsin waters. A weak rule, or one that doesn't effectively address Wisconsin's problem, could postpone the solution needed to protect the health of future generations in Wisconsin.

Wisconsin can lead on this issue as we did for acid rain. We are part of US-Canadian treaties and accords that include the Bilateral Air Quality Agreement and the Great Lakes Water Quality Agreement whose aim is to eliminate mercury and other toxic substances from entering the Great Lakes. "Sinks" or places that become the final repository for pollution have unique properties. The cold, deep waters of the Great Lakes provide those unique properties - hence the need for these agreements. We have made great headway in eliminating the PCBs that have caused fish advisories on all of the Great Lakes. We know from the advisories now blanketing our state that our lakes and streams are at their limits for mercury. The vast waters of the Great Lakes could become the final resting place for much of the mercury being released. Can we afford to see the Great Lakes go from one advisory for PCBs to another for mercury by failing to take action to reduce mercury pollution?

Lastly, in several international agreements, the US Government and the State of Wisconsin are committed to a goal of virtual elimination of mercury emissions by 2020. I urge you to show leadership on this issue and adhere to that goal.

We respectfully ask you to reject efforts to weaken this rule and instead to strengthen the proposed mercury rule to include:

- **A 90% reduction of current mercury pollution from coal plants.**
- **A measurement of mercury reductions from what is coming out of power plant smokestacks, NOT from the mercury that is in the coal.**
- **A 150% offset for new sources of mercury.**
If our goal is to make fish safe to eat for everyone in the future, we can't just clean up existing sources of mercury pollution and replace them with new mercury polluters, like large coal-fired power plants that will be around for 40-50 years.

These provisions were supported in public comment and should be reinserted into the rule. Thank you for the opportunity to share our viewpoint.



***Joint Senate/Assembly Natural Resource Committees:
Public Hearing on State Mercury Regulations
August 13, 2003***

Good morning Chairmen and members of the Committees. My name is Kathleen Standen and I am here representing We Energies, one of the four utilities affected by the state mercury rules.

We appreciate the opportunity to provide comments to you today and think that legislative oversight of this rule package is a good idea. We Energies has consistently supported mercury reductions and state mercury rules. Today I will repeat to you comments that We Energies has previously made to the DNR during the Administrative rule-making process.

First, We Energies has adopted a somewhat different approach to the state-only mercury-only rules than many of the other stakeholders. We support a multi-emissions approach that targets reductions in mercury, as well as sulfur dioxides, nitrogen oxide, and greenhouse gases. A multi-emission approach accomplishes both lower costs to our customers and enhanced improvements to air quality.

Last September, in advance of any state or federal mercury rules, We Energies signed a Multi-Emission Cooperative Agreement with the DNR. This agreement features a 50% reduction in mercury, along with similar levels of reductions in SO₂ and NO_x over a 10 year period.

This agreement was intended to provide an alternative compliance option for the pending mercury rules. Unfortunately the final mercury rules don't fully allow this. The rule should allow application of multi-emission alternatives for maximum environmental benefit at least cost.

Another missed opportunity is that the rule doesn't include a banking provision. This would allow utilities to accumulate reduction credits for early actions, and apply them to future compliance requirements. A banking provision is especially appropriate for these rules because mercury bioaccumulates in the environment, making early reductions desirable. In addition, control technology is still under development. The uncertainty associated with planning for controls can be managed more cost effectively with a banking system.

Three years ago, in Act 195 (SB 287) the Legislature granted the Department the authority to develop and implement an emissions credit registry. Using the NR447 early credits registry as a mechanism for implementing a banking provision in NR446 is an ideal way to coordinate across Air Bureau programs.

We Energies continues to be a leader in mercury controls research and demonstration. A 60% reduction was the average achieved during our recent demonstration of the sorbent injection

technology at our Pleasant Prairie Power Plant. Another important outcome of the demonstration was that the sorbent contaminated the ash. Since Wisconsin utilities have worked very hard to lead the nation in beneficial ash re-use, and avoid the need for new landfill space, these results are important to our continued research.

In January of this year U.S.DOE selected We Energies proposal to sponsor the nation's first full-scale test of the EPRI-patented TOXECON technology. The objectives of this demonstration are to avoid ash contamination while simultaneously reducing mercury emissions along with particulate matter, SO₂ and NO_x. This joint DOE research will be completed over a five year period.

In terms of rule efficiency, we agree that it is important for Wisconsin to avoid regulatory duplication. The rule language recommended by WUA and WMC that limits the state mercury rules from being more restrictive than federal rules makes sense. The absence of rule reference to this state statutory limitation has already created confusion and uncertainty.

Let me be clear that We Energies has consistently supported Wisconsin mercury rules. Ultimately, however, Wisconsin utilities must comply with federal requirements applicable to all utilities. The Wisconsin rules should be about anticipating federal rules – not about creating rule duplication or exceeding federal requirements.

Finally, we find it appropriate that the state rules not duplicate federal regulations for new coal units. Any new coal units built anywhere in the U.S. are already subject to federal mercury requirements. We have proposed an 80% control requirement for the new units that are part of our *Power the Future* energy plan, but expect that this is at the low end of the performance that will actually be achieved. We recognize the Department for their foresight since duplicative state rules would only discourage retirement of existing units and delay the addition of new, cleaner units.

In closing, once again we appreciate the legislature's involvement in evaluating environmental rules and thank the committees for the opportunity to participate in the process.

Testimony to the Wisconsin Legislature (FAVOR)
RE: New Rule on Mercury Emissions

Jeanne Beauchamp Hewitt, PhD, RN
Associate Professor, College of Nursing
and
Associate Director, Institute of Environmental Health
University of Wisconsin–Milwaukee

Mercury is a very toxic heavy metal. Mercury pollution makes its way in to the food chain and contaminates fish that we eat. Mercury is associated with adverse reproductive effects in both men and women (Thomas in Casarett & Doull's Toxicology, 1996, pp. 565-6), and at higher doses (a) loss of coordination, (b) impaired speech, (c) constriction of the visual field, and (d) hearing loss are experienced (Potts in Casarett & Doull's Toxicology, 1996, p. 607).

While those health effects are important, our greatest concern involves the fact that mercury is most highly toxic to the fetus and to infants and young children because the nervous system is undergoing development then. Relatively small levels of exposure to mercury are associated with significant neurological and other health effects. There is substantial evidence from well-conducted epidemiological studies that mercury exposure during prenatal development adversely affects hearing, vision, attention, memory, fine motor coordination, and language skills—all critical to learning and functioning as productive citizens. In addition, some cardiovascular functions appear to be compromised long after the initial exposure to mercury. In light of these findings, it is imperative that we take action now to limit the primary cause of mercury exposure among children here in Wisconsin and elsewhere. That primary cause of mercury contamination is the result of emissions from coal-burning power plants.

In the U.S., exposure to mercury in people comes primarily from eating fish from mercury-contaminated bodies of water (www.nap.edu/openbook/0309071402/html/l.html, 2000). While mercury is found around the world, Wisconsin's wealth of lakes and popularity of sport fishing puts our residents especially at risk.

When mercury-contaminated fish is eaten, it takes 90 days for half of this toxin from a single meal to be eliminated from the body. As a result, humans who eat fish accumulate mercury. Women of childbearing age who eat fish retain much of the mercury in their body over many years. During pregnancy and when nursing their infants, women unintentionally expose the developing fetus and infant to mercury through the transfer of their own body stores of mercury to their fetus or nursing infant (Grandjean et al., 1994).

All of Wisconsin's lakes are under a mercury advisory (EPA Fact Sheet, EPA-823-F-03-003, May 2003; www.dnr.state.wi.us/org/water/fhp/fish/Advisories/mercuryup.htm).

This revised state-wide mercury advisory is important because the science shows that lower levels of mercury present significant health risks. This is very similar to what has happened with lead; we now realize that smaller doses of mercury carry risks of adverse health effects.

Scientists estimate that each year, 60,000 infants born in the U.S. will experience neurological damage and learning difficulties due to mercury exposure (DNR website). Who are these children? A disproportionate share of these children are the offspring of sport-fishing men and women, and of American Indians, Hmong, and other ethnic groups whose diets are high in locally caught fish. They also are the children of health-conscious middle- and upper-class families who consume commercially caught fish both from Wisconsin lakes and coastal waters. They are all your constituents.

My colleagues and I at UW-Milwaukee have been involved with the mercury issue for more than a decade through our teaching, research, and outreach efforts. Although restricting fish intake particularly among women of childbearing age is one way to reduce this risk, it is a short-term, stop-gap measure. As I tell my nursing students, relying on educating individuals about mercury in fish so that they can make the right choices for their family is simply not enough. What we need is to get to the root of the problem. The root of the problem is that we have mercury pollution entering our waters and our fish. We need to solve that problem and this mercury rule is a step in the right direction.

Solving the problem involves reducing mercury emissions—predominantly from coal-burning power plants—so that the mercury concentration in fish is drastically reduced—that will have the largest impact on protecting the health of our children now (National Academy of Sciences report, Toxicological Effects of Methylmercury, (2000), website as noted above).

While the current proposed rule is a step in the right direction, a stronger rule is necessary to have the greatest impact. I support a 90% reduction of current mercury pollution from coal-burning power plants.

I had the opportunity to provide testimony to the Department of Natural Resources in Milwaukee in 2001. I thank you for the opportunity to address this issue with you today. I urge you to act now to implement a rule that reduces mercury emissions from power plant sources and which includes a 150% offset for new sources of mercury. There is an urgent need for you to act in the best interest of our children.

River Alliance of Wisconsin



To: The Members of the Assembly Committee on Natural Resources and the Senate
Committee on Environment and Natural Resources

From: Rich Bogovich, Policy Project Manager

Date: August 13, 2003

Re: Clearinghouse Rule 01-081, relating to mercury emissions

The River Alliance of Wisconsin endorses the Department of Natural Resources' mercury rule, though the serious threat posed by mercury requires an even stronger rule.

The River Alliance is a non-profit, non-partisan group of citizens, organizations, and businesses dedicated to advocating for the protection, enhancement, and restoration of the 40,000 miles of rivers and streams in our state. River advocates from around the state, including anglers, paddlers, landowners and business people, founded the River Alliance in 1993 to build an informed and active constituency for Wisconsin's rivers. Our current statewide network of river advocates includes more than 1,800 individual and business members and more than 45 organizations – one of the largest memberships of statewide river advocacy groups in the country.

DNR staff are to be commended for taking on this challenging issue and for initially proposing a rule that, with slight modifications, would have served as a model for the nation. Why is this rule so important? A couple of points that other speakers will make bear repeating.

We need to reduce mercury to protect the health of our children, future generations and riverine ecosystems. From a wildlife perspective, studies have linked high mercury levels to reproductive harm in loons, eagles, rainbow trout, and walleye, among other species. Some Wisconsin residents depend on the fish they catch to supplement their families' diets and may be at greater risk of exposure to methyl mercury.

This is a critical need in Wisconsin that must be addressed soon. That is why we support the original request that the DNR require a 90% reduction of mercury emissions by 2010. Older power plants were exempted from federal new source standards 25 years ago yet only recently have started talking about cutting their emissions substantially. We have known about the problem of mercury-contaminated fish for over 30 years—the DNR has had the

authority to regulate mercury pollution from coal plants for 30 years. We don't need to wait any longer.

We do have some concerns about pollution trading. Pollution trading, in the case of utilities, occurs when a company pays for the reduction of mercury elsewhere (e.g. at an industry or through a thermometer collection program) in order to avoid actual emission reduction from their own facilities. Many other industries (like those that produce batteries and paint) have phased out the use of mercury in their products. But, older coal plants remain the largest source of mercury and the only source that is completely unregulated. Because of this, trading needs to be severely restricted or not allowed.

This mercury rule is an historic opportunity to make significant strides in cleaning up our most valuable natural resource – our water. An estimated two million anglers fish in Wisconsin every year, and sport fishing generates more than \$2 billion in spending in Wisconsin communities a year. This is an economic issue as well as a recreation issue.

As our executive director said in testimony two years ago, we have a proud tradition of being a leader in natural resource protection in Wisconsin. From John Muir to Aldo Leopold to Gaylord Nelson and Warren Knowles, we have produced leaders who have recognized that our quality of life is intrinsically connected to the quality of our natural resources. Adopting a very strong mercury rule adds one more building block to that great legacy.

AUG 14 2003

08/11/03

DEAR SENATOR KEDZIE,

WE OPPOSE THE DEPT. OF
NATURAL RESOURCES RULE, IN
REGARD TO REGULATING THE
EMISSION OF MERCURY BY THE
STATE'S ELECTRICAL GENERATING
PLANTS.

PLEASE RETURN THE RULE TO
THE DNR FOR FURTHER CHANGES,
THE WISCONSIN RULE SHOULD NOT
BE MORE STRINGENT THAN IT IS
IN OTHER STATES.

THANKS,

RUTH + DAVID FOUNTAIN

Ruth Fountain



RUTH E FOUNTAIN
800 MITCHELL AVE # C122
KING, WI 54946-0601



DAVID H FOUNTAIN
800 MITCHELL AVE # CT122
KING, WI 54946-0601



Memo

TO: Assembly Committee on Natural Resources
Senate Committee on Environment & Natural Resources
FROM: Jeff Schoepke, Director, Environmental Policy
DATE: August 13, 2003
RE: ACR 01-081, Proposed Mercury Regulations

Thank you for the opportunity to provide comments on proposed revisions to NR 446, creation of a program regulating air emissions of mercury.

Wisconsin Manufacturers & Commerce (WMC) is a statewide, non-profit association representing Wisconsin business. WMC has 4,300 members that include both large and small manufacturers, utilities, service companies, local chambers of commerce and specialized trade associations.

WMC has opposed the rule throughout this rulemaking process for three major reasons: 1) It is widely accepted that mercury loadings are affected by long range transport, and that a Wisconsin rule will have little impact on mercury in Wisconsin lakes; 2) The rule as proposed will increase electric rates and cost jobs; 3) Because the federal government is moving forward with rules, a voluntary program as a bridge to the federal program is the most prudent interim policy approach.

The final rule package before you today has several important revisions that improve the proposal. WMC is pleased, for example, that the final rule removes the major stationary source cap. WMC is also pleased that burdensome offset requirements have been eliminated from the rule.

However, WMC still has significant concerns regarding the overall approach of the effort and will oppose the rule unless several modifications, outlined below and in the attachment to this memo, are made prior to adoption.

First, the rule should be amended to exempt sources subject to a federal mercury emission limit. Under section 285.27 (2) (a) Wis. Stats. DNR would be required to promulgate a corresponding state standard once EPA finalizes their proposal next year. While the above provisions reference section 112 of the Act, there is no logical policy reason to treat differently a federal mercury emission limitation under another section of the Act. If the source is covered by a federal mercury program, that program should control to avoid duplication and inconsistencies. Thus, the simple policy change would be to exempt from the rule all sources subject to a federal emission limitation.

Second, the rule's second-phase, 80 percent reduction requirement should be removed from the rule. It is impossible to predict in 2003 the appropriate Wisconsin mercury program for 2015. However, we know the current state of technology is such that the 80 percent reduction mandate likely could not be met. Technology and policy developments will surely evolve, however, the decision of the appropriateness of an 80 percent reduction is better made after the first phase and a thorough review of the rule at that time.

For example, almost everyone agrees that a federal mercury program will be in place by that date. This rule, always promoted by the DNR as a "bridge" to the federal program, need not address the second reduction phase at this time – it may simply be unnecessary. Should the federal government falter, there is ample opportunity before 2015 to develop a second phase. From a practical perspective, the delay of the 80 percent reduction decision will also help assure swift enactment of this rule without compromising DNR's primary objective for 40 percent reduction pending federal action.

Several utilities regulated under this rule have communicated technical and policy concerns with the latest draft. Unfortunately, major changes to the rule were shared with stakeholders less than a month before the board is being asked to adopt them. Thus, there are many additional issues that have arisen that could be addressed if more time were allowed. WMC requests the Board consider the technical changes requested by utilities before adoption of the rule.

Also, with the elimination of the major sources cap, trading with non-regulated entities is no longer allowed under the rule. In order to help reduce the total cost of reducing mercury emissions, WMC recommends the rule be amended to allow non-regulated companies to trade.

WMC's objections to the rule are based on a general position that the rule's costs and benefits are not commensurate. That is, the rule will impose significant costs to ratepayers and provide little in benefits to Wisconsin fishermen and aquatic ecosystems. We still believe that for these reasons, a Wisconsin-only rule makes little sense. However, these concerns could be mitigated by the adoption of an exemption for sources covered by federal rules and elimination of the second-phase, 80 percent reduction requirement. Should the Board make these changes, WMC will remove its official objection.

**Proposed Changes to DNR's Proposed Mercury Rule
(June 25, 2003)**

Proposed Amendment 1 – Existing NR 446.01 (1) is amended to read:

APPLICABILITY. This chapter applies to all air contaminant sources which may emit mercury and to their owners and operators. Stationary sources that are subject to a federal emission limit for mercury are exempt from the requirements of this chapter.

Rationale. This amendment is consistent with the relevant statutory provision, Section 285.27(2) (a), Stats., which provides:

If an emission standard for a hazardous air contaminant is promulgated under section 112 of the federal clean air act, the department shall promulgate by rule a similar standard but this standard may not be more restrictive in terms of emission limitations than the federal standard

DNR has proposed several rule provisions that are consistent with this statutory provision and the suggested amendment, including NR 446.05 (2) in the proposed mercury rule relating to new or modified sources:

(2) New or modified stationary sources that are subject to an emission limit for mercury required under section 112 of the Act are exempt from the requirements of this section.

In addition, this policy is reflected in proposed NR 445.01(1)(b) [Air Toxic Program], which is recreated to read:

The emission limitations and control requirements in this chapter do not apply to hazardous air contaminants emitted by the emissions units, operations or activities that are regulated by an emission standard promulgated under section 112 of the Clean Air Act (42 USC 7412).

While the above provisions reference section 112 of the Act, there is no logical policy reason to treat differently a federal mercury emission limitation under another section of the Act. If the source is covered by a federal mercury program, that program should control to avoid duplication and inconsistencies.

Related Changes. Should this amendment be adopted, several provisions are no longer necessary, including:

- NR 446.05 (2), providing an exemption for new sources subject to federal standards)
- NR 446.12 (2) and (3), relating to report on effect of federal mercury regulations.

Proposed Amendment 2 – Proposed NR 446.06 (Mercury emission limits for major utilities) is amended to read:

(1) (a) Beginning January 1, 2008, no owner or operator of a major utility may cause, allow or permit mercury emissions from all stationary sources of the major utility on an annual basis in an amount which exceeds the controlled mercury emissions for the major utility's stationary sources, determined by the department under par. (b).

(b) No later than October 1, 2005, the owner or operator of a major utility shall conduct a source performance test on each combustion unit to determine the control efficiency of any control equipment or emission reduction activity on the mercury emissions from the combustion unit. This control efficiency shall be applied to the baseline mercury emissions calculated under s. NR 446.03 for the unit, using the procedures in s. NR 446.09, to determine the controlled mercury emissions of the combustion unit.

(2) Beginning January 1, 2010, no owner or operator of a major utility may cause, allow or permit mercury emissions from all stationary sources of the major utility on an annual basis in an amount which exceeds 60% of the baseline mercury emissions for the major utility's stationary sources, determined by the department under s. NR 446.03.

~~(3) Beginning January 1, 2015, no owner or operator of a major utility may cause, allow or permit mercury emissions from all stationary sources of the major utility on an annual basis in an amount which exceeds 20% of the baseline mercury emissions for the major utility's stationary source's, determined by the department under s. NR 446.03.~~

Rationale. It is impossible to predict in 2003 the appropriate Wisconsin's mercury program for 2015. Technology and policy developments will surely evolve. For example, almost everyone agrees that a federal mercury program will be in place by that date. This rule, always promoted as a "bridge" to the federal program, need not address the second reduction phase at this time – it may simply be unnecessary. Should the federal government falter, there is ample opportunity before 2015 to develop a second phase. From a practical perspective, the delay of the 80 percent reduction decision will also help assure swift enactment of this rule without compromising DNR's primary objective for 40% reduction pending federal action.

Related Changes. Proposed NR 446.12 (Periodic evaluation and reconciliation reports) is deleted and recreated to read:

NR 446.12 Additional reductions for major utilities. (1) By January 1, 2009 [one year before the first phase reduction deadline], the department staff shall submit a report to the natural resources board if major utilities are not subject to a emission limit for mercury required under the Clean Air Act by that date. The report shall include:

(a) An evaluation of the scientific and technology developments in relation to the control or reduction of mercury emissions.

(b) An evaluation of whether mercury emission reductions for major utilities beyond those required by s. NR 446.06 are achievable, given the scientific and technological developments.

(c) Recommendations for revisions to this subchapter relating to major utilities based on the scientific and technological developments, and existing or pending federal mercury programs.

(2) The natural resources board shall review this report and, if they include recommendations for rule revisions, determine whether the department should proceed with actions based on the recommendations.



WISCONSIN UTILITIES ASSOCIATION, INC.

44 EAST MIFFLIN STREET • SUITE 202 • P.O. BOX 2117 • MADISON, WISCONSIN 53701-2117 • TELEPHONE (608) 257-3151 • FAX (608) 257-9124

TO: Members of the Assembly Committee on Natural Resources
Members of the Senate Committee on Environment and Natural Resources

FROM: Wisconsin Utilities Association

RE: University of Rochester Medical Center Study on the Effects of Mercury

DATE: August 14, 2003

At the public hearing held on Assembly Clearing House Rule 01-081 regarding the control of mercury emissions, a couple of people referenced the attached study in their testimony.

We thought you might be interested in seeing this. You may also access this information at this web address <http://www.urmc.rochester.edu/pr/News/index.cfm>.

Please feel free to contact us if you have any questions. Thank you.



UNIVERSITY OF
ROCHESTER
MEDICAL CENTER

For more information, contact:

Tom Rickey
(585) 275-7954
tom_rickey@urmc.rochester.edu
05/16/2003

No Detectable Risk from Mercury in Seafood, Study Shows

An exhaustive study of 643 children from before birth to 9 years of age shows no detectable risk from the low levels of mercury their mothers were exposed to from eating ocean seafood, according to a study in the May 16 issue of *The Lancet*.

Children born to mothers-to-be who ate an average of 12 meals of fish a week – about 10 times the average U.S. citizen eats – showed no harmful symptoms.

The study by scientists at the University of Rochester Medical Center is the latest in a series of updates on children who have been studied since their birth in 1989 and 1990 in the Republic of the Seychelles, an island nation in the Indian Ocean. The children have been evaluated five times since their birth, and no harmful effects from the low levels of mercury obtained by eating seafood have been detected.

“Consumption of fish is generally considered healthy for your heart, yet people are hearing that they should be concerned about eating fish because of mercury levels,” says lead author Gary Myers, M.D., a pediatric neurologist. “We’ve found no evidence that the low levels of mercury in seafood are harmful. In the Seychelles, where the women in our study ate large quantities of fish each week while they were pregnant, the children are healthy.”

In a commentary on the research in *The Lancet*, Johns Hopkins scientist Constantine Lyketsos writes that, “For now, there is no reason for pregnant women to reduce fish consumption below current levels, which are probably safe.” He calls the Seychelles study a “methodological advance over previous studies.”

Questions about the health effects of mercury often boil down to seafood because fish are the primary source of exposure to mercury for most people. Scientists estimate that about half the mercury in the Earth and its atmosphere originates from natural sources such as volcanoes, and about half comes from man-made sources.

People receive most of their mercury exposure by eating ocean fish like tuna, swordfish and shark. The fish eaten by women in the Seychelles had approximately the same levels of mercury as those eaten by consumers in the United States – but they ate much more fish than most people in the United States. The Seychelles women, however, had an average of six times as much mercury in their bodies, as measured in hair samples, as most people in the US.

“This study indicates that there are no detectable adverse effects in a population consuming large quantities of a wide variety of ocean fish,” says Myers, the senior author of the Seychelles study and an internationally recognized authority on mercury. “These are the same fish that end up on the dinner table in the United States and around the world.”

In the current study doctors and nurses tested the children in a variety of ways and measured 21 different cognitive, behavioral, and neurological functions such as concentration, attention span, problem-solving abilities, intelligence, and motor skills. Only two functions varied slightly according to mercury level: Children of women with higher mercury levels were slightly less likely to be hyperactive, and sons of such women did slightly worse on a pegboard task. Statistically, both findings are likely due to chance, the researchers say.

The Seychelles findings apply to fish bought and sold commercially, at grocery stores, supermarkets, seafood markets, and restaurants. Those fish are already regulated based on their mercury levels. Consumers should carefully follow advisories about eating fish caught in lakes and rivers, since there are hundreds of polluted waterways whose fish *are* dangerous to eat in abundance, often because of pollutants like PCBs.

The Seychelles study came about as a result of previous work by the same Rochester team, which put together the first precise data showing that pre-natal exposure to mercury could harm a developing child. Their study of the victims of an accidental mercury poisoning event in Iraq more than 30 years ago spurred them to start the Seychelles study to try to pinpoint the levels at which mercury poses a danger.

Now the team is launching a new study in the Seychelles to compare the levels of nutrients pre-natally to the health of children early in their lives. The study has its roots in a finding in one of the previous Seychelles reports, that children born to mothers with slightly higher mercury levels did better on some neurological and intelligence tests than their counterparts. That may be because those children’s mothers with the higher mercury ate more fish. This study, funded by the National Institute of Environmental Health Sciences, is being done with colleagues at the University of Ulster in Northern Ireland and Cornell University.

“There are a lot of good, vital nutrients in fish,” says Myers, who is directing the team that is studying 300 children to compare their health with the levels of polyunsaturated fatty acids, selenium, and other nutrients in their mothers during pregnancy.

The Seychelles study, ongoing since 1989 with funding from the National Institute of Environmental Health Sciences, is one of the longest “longitudinal” studies ever done in children. The research has been funded by the NIH, the U.S. Food and Drug Administration, and the Republic of the Seychelles.

“The cooperation from people in the Seychelles and the Ministry of Health has been extraordinary,” Myers says. “They recognize the importance of this subject both to their own citizens and to the people around the world who consume fish.”

In addition to Clarkson and Myers, the Seychelles team includes Philip Davidson, Ph.D.; Donna Palumbo, Ph.D.; Li-Shan Huang, Ph.D.; Elsa Cernichiari; and Jean Sloane-Reeves, all of the University of Rochester; and Conrad Shamlaye of the Republic of the Seychelles. Christopher Cox, Ph.D., of the National Institutes of Health; Gregory Wilding, Ph.D., of the University at Buffalo; and James Kost, Ph.D., also took part.



TO: Members of the Senate Environment and Natural Resources Committee
Members of the Assembly Natural Resources Committee
FROM: Marc Looze, Clean Air Campaign Director
DATE: August 18, 2003

RE: Additional Information as Requested in Support of the Mercury Rule CR-01-181

Enclosed, please find three follow-up informational items on mercury from Clean Wisconsin:

- 1) Summary of mercury control technology removal rates from the Electric Power Research Institute
- 2) DNR response to Wisconsin Utilities Association mercury modeling study
- 3) Text of the mercury polling question from Clean Wisconsin water poll.

Thank you for reviewing these materials. If you have any further questions, please contact me at 251-7020.

Marc Looze
Clean Wisconsin

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Table 1. Mercury Emission Reductions from the ICR (EPRI 2000a)

Control Technology**	Mercury Removal (%)*	
	Bituminous	Sub-Bituminous
<i>ESPC</i> (421 B, 123 SB)	24 (-22 to 54)	19 (7 to 38)
<i>ESPh</i> (67 B, 26 SB)	10 (0 to 27)	2 (-8 to 13)
FF (31 B, 24 SB)	75 (35 to 99)	67 (48 to 86)
SD + <i>ESP</i> (2 B, 3 SB)	- -	18 (-17 to 76)
SD + FF (31B, 10 SB)	98 (97 to 99)	-7 (-28 to 22)
<i>ESPC</i> + <i>FGD</i> (90 B, 14 SB)	65 (42 to 84)	19 (11 to 28)
<i>ESPh</i> + <i>FGD</i> (7 B, 11 SB)	69 -	13 (-12 to 24)

* Averages, with ranges in (). Based on tests at 2 to 5 sites for each fuel/control configuration except *ESPC*/bituminous, which had 10 sites. Removal based on coal mercury concentration and outlet emissions. Negative numbers are presumed to be measurement errors and are taken as "0" in the text discussion.

** Numbers in parentheses = population in U.S. power industry (B = bituminous, SB = subbituminous); total population = 1045 (excl. FBC and gasification)

ESP_c = cold-side ESP (located after air heater)

ESP_h = hot-side ESP (located before air heater)

FF = Fabric Filter (aka "baghouses")

SD = Spray Dryer

FGD = Flue Gas Desulfurization

**Technical Review of the Report:
“Modeling Deposition of Atmospheric Mercury in
Wisconsin” (Atmospheric and Environmental
Research, Inc.)**

**Wisconsin Department of Natural Resources
Mercury Analysis Team**

July 9, 2002

The Department's Mercury Analysis Team has conducted an initial review of the report "Modeling Deposition of Atmospheric Mercury in Wisconsin" (Atmospheric and Environmental Research - AER Report), commissioned by the Wisconsin Utilities Association (WUA) and Dairyland Cooperative. The report was presented to the Department on May 30, 2002. Based on its review, a listed of technical questions and comments related to the report are being provided to WUA and Dairyland Cooperative to help facilitate the exchange of information regarding the science and understanding of modeling mercury emissions.

The Mercury Analysis Team was created for the purpose of developing an atmospheric mercury modeling system for the Great Lakes Region. Members of the team include policy, monitoring, inventory, and modeling staff from the Bureau of Air Management. The Analysis Team understands the complexity of mercury deposition modeling and welcomes the opportunity to review and learn from other mercury modeling efforts. The questions listed below are intended to solicit a better understanding of AER's modeling effort as the Analysis Team develops its own mercury modeling system. The comments provide observations on the technical aspects of the report that can hopefully be addressed in future modeling projects.

Questions

- It is stated that: "Overall, the model performance was judged to be satisfactory for calculated ambient concentrations of elemental Hg [Hg(o)], divalent gaseous Hg [Hg(II)], and particulate Hg [Hg(p)], as well as for wet deposition fluxes of total Hg." *Since ambient data for divalent and particulate Hg is not readily available, how was model performance for these forms of mercury evaluated?*
- The modeling exercise was a good first step and more work needs to be done in order to get as accurate results as possible. *Is WUA planning to continue efforts to model mercury transport and deposition to Wisconsin and the region and build off of the work recently completed?*
- In the "Conclusion" section it states...
"Emissions from all anthropogenic sources in Wisconsin have an impact ranging from 4 to 10% at the Wisconsin MDN sites, less than 10% impact on total Hg deposition in northern Wisconsin, and less than 25% impact in most of central and southern Wisconsin."
If we take this to mean that the mercury deposition potential of the Wisconsin emissions is very small, then apparently other sources of emissions have greater impact in Wisconsin than the local emissions. Could we assume the Wisconsin mercury emissions have a greater impact at a downwind location than what the local emissions there contribute?
- In order to properly assess the work being done to corroborate the hypothesis that Hg(II) is reduced rapidly to Hg(o) in power plant plumes, the Department would need access to those studies cited in the AER Report. *Can*

copies of the following sited sources be made available to the Department for review?

Edgerton, E.S., Hartsell, B.E. and Jansen, J.J., 2001. Atmospheric Mercury Measurements at a Rural and Urban Site near Atlanta, GA, USA. 6th International Conference on Mercury as a Global Pollutant, 15-19 October 2001, Minamata, Japan.

Laudal, D., 2001. Final Report for JV Task 24 – Investigation of the Fate of Mercury in a Coal Combustion Plume Using a Static Plume Dilution Chamber Cooperative Agreement No. DE-FC26-98FT40321; UND Fund 4727.

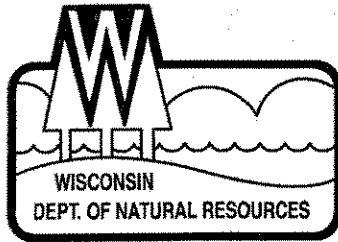
Comments

Introduction

- The introduction includes the caveat: "...TEAM is a regional model designed to study impacts at larger scales, approximately the size of the U.S. states. This model is not designed to simulate localized impacts of point sources...Consequently, such local impacts are likely to be misrepresented by the regional model." This message is repeated in the section discussing the Air Quality Model; moreover, it is suggested that "Other models...should be used to assess local impacts." Yet, it seems that this paper does just that: draws conclusions about local impacts by concluding that the local deposition of mercury that is attributable to utility sources is less than 10%. Understanding and disclosing the limitations of the models used in any project is critical when interpreting the modeling results yet this information is absent from the Executive Summary.

Emissions Inventory

- The inventory used in this project is based on a scenario for 1998 developed by AER for EPRI (Seigneur et al., 2001), with a WDNR 1994/1995 inventory replacing all Wisconsin emissions except for coal-fired power plants. The reason for using an inventory that doesn't coincide with the modeling year is unclear. In reviewing Wisconsin's point source inventory data, it is found that the mercury reported as alkyl compounds, which includes any methyl mercury, was much lower for 1994 and 1995 than 1998-2000. *Table 1* shows that the mercury reported as alkyl compound emissions to the Wisconsin point source inventory increased by a factor of ten between 1995 and 1998. Whether this is due to inaccurate reporting or represents a real trend is unknown. It is also unknown if the reported 1994 and 1995 emissions are similar to those used by AER or what the impact of a few hundred pounds of reactive gaseous mercury (RGM) would be to the modeling results. This is not addressed in the report.



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott McCallum, Governor
Darrell Bazzell, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY 608-267-6897

July 9, 2002

Mr. William Skewes
Wisconsin Utilities Association, Inc.
44 East Mifflin St. - Suite 202
Madison, WI 53703

Subject: Wisconsin Mercury Deposition Case Study

Dear Mr. Skewes:

Thank you for the opportunity to review and comment on the "Wisconsin Mercury Deposition Case Study" commissioned by the Wisconsin Utilities Association, Inc. and Dairyland Power Cooperative. Attached is a technical review of the study that was performed by the air program Mercury Analysis Team. Since June 2001, the Mercury Analysis Team has been actively conducting a comprehensive analysis of the emission, transport, transformation, and deposition of mercury to land and water surfaces in the region to further development of a mercury modeling system for Wisconsin and the Great Lakes region.

In your May 31, 2002, press release, concerning the "Wisconsin Mercury Deposition Case Study" conducted by Atmospheric and Environmental Research, Inc., you ask the department to consider the study results in determining appropriate mercury emission reductions requirements for Wisconsin utilities.

While it is important to conduct modeling analyses such as you have performed to improve our understanding of mercury impacts it should also be recognized that there is still a great deal of uncertainty associated with the current mercury modeling systems that limit their use to make regulatory decisions. Our review of this study indicates that there are substantial deficiencies and uncertainties in many mercury modeling components in this study including emissions data (quantity and speciation), chemical and physical processes, and modeling assumptions. Because of these deficiencies and uncertainties we can not draw the same conclusions that you state in your press release based on this modeling effort.

While I can appreciate your interest in providing information on the deposition of utility mercury emissions, it is also important to recognize that mercury deposition modeling still needs more development work. We are committed to continue working with you and other interested parties to develop a representative mercury modeling system for Wisconsin. Please let me know if you have any questions or comment concerning our review of this study.

Sincerely,

Lloyd Eagan, Director
Bureau of Air Management

cc: Citizen Advisory Committee and Technical Advisory Group Members

BELDEN RUSSONELLO & STEWART
RESEARCH AND COMMUNICATIONS

**Survey of Wisconsin Voters
For the Biodiversity Project and Clean Wisconsin**

Interviewing conducted April 28, 2003 through May 6, 2003.

N = 1,200 Wisconsin registered voters.

Data are weighted by age.

Percents may add to 99% or 101% due to rounding.

* indicates less than 1% , - indicates zero.

Hello, my name is _____ and I am an interviewer with Belden Research. We are conducting a public opinion survey and your telephone number was selected at random. We are not selling anything. May I please speak to the person 18 years old or older in your household who had a birthday most recently?

Q1. First, are you currently registered to vote in Wisconsin?

YES	100%
NO	-
DON'T KNOW	-
REFUSE	-

Q2. Did you happen to have a chance to vote in the 2000 Presidential election when the candidates were George W. Bush and Al Gore?

YES	89%
NO	11
DON'T KNOW	1
REFUSE	-

Q3. Sometimes things come up and not everyone has a chance to vote in every election. Did you happen to have a chance to vote in the Congressional elections last Fall, in November 2002?

YES	68%
NO	29
DON'T KNOW	3
REFUSE	-

Here are some facts about Wisconsin. Please tell me if you think each of the following is an urgent problem that should be dealt with right away, a problem but not urgent to deal with, or something that is not a problem right now? ROTATE Q63-Q66

	Urgent deal with right away	Problem but not urgent	Not a problem right now	DK/ Refuse
Q65. Wisconsin's lakes and rivers have become increasingly polluted with mercury that comes mainly from incinerators, coal-burning power plants and chemical factories.	57%	31	6	5

D19. Do you consider yourself to be a Democrat, a Republican, an Independent, or something else?	DEMOCRAT	30%
	REPUBLICAN	27
	INDEPENDENT	34
	SOMETHING ELSE.....	1
	DON'T KNOW	4
	REFUSE.....	3

AUG 24, 2003



John F. Sieradski, Jr.
P.O. Box 39
Lapeer, MI 48446-0039

SEN. NEAL KEDZIE,

AS A WISCONSIN UTILITY INVESTOR I AM DEEPLY CONCERNED WITH "CLEARINGHOUSE RULE 01081-MERCURY".

ONLY ABOUT 2% OF MAN MADE MERCURY ON EARTH COMES FROM ACTIVITY IN THE UNITED STATES. THE REST COMES FROM OTHER COUNTRIES WHICH BURN A LOT OF DIRTY COAL AND IS CARRIED AROUND THE EARTH BY AIR CURRENTS.

THE AMOUNT EMITTED IN WISCONSIN IS SO SMALL IT IS UNMEASURABLE WHEN YOU WEIGH THE BILLIONS OF DOLLARS IN COST AGAINST THE VERY SMALL AMOUNT REMOVED.

THE UNITED STATES GOVERNMENT IS CURRENTLY DEVELOPING MERCURY RULES. ALL STATES WILL BE AFFECTED EQUALLY.

AN INTERNATIONAL MERCURY RULE WOULD BE BETTER, THOUGH UNREALISTIC.

SEN. NEAL, DON'T YOU THINK IT WILL BE MORE COST EFFECTIVE WITH A GOVERNMENT RULE FOR ALL STATES?
I URGE YOU TO WAIT WITH "CLEARINGHOUSE RULE 01081-MERCURY".

SINCERELY

John F. Sieradski

Senator Kedzie ✓
313-5



A Division of the Wisconsin Federation of Cooperatives

131 West Wilson Street, Suite 400 • Madison, WI 53703 • Phone (608) 258-4400 • FAX (608) 258-4407

October 22, 2003

TO: Mr. Tryg Solberg, Chair Natural Resources Board
Members, Natural Resources Board

FR: David Jenkins, Electric Division Manager
Wisconsin Federation of Cooperatives

RE: Mercury Emissions Rule

I was surprised to learn today that the mercury emissions rule was brought up at the Natural Resources Board meeting, even though this item was not on the agenda. I understand the Board intends to vote on returning this rule to the Legislature in the very near future. I strongly urge the Board not to do so.

It was extremely upsetting to read George Meyer's letter to you, dated today, in which he characterized the Legislative review process of this rule as "biased, one-sided and extremely disrespectful." Mr. Meyer did not attend the Aug 13 hearing to which he refers. I attended all seven hours of it.

Mr. Meyer's characterization of the treatment of witnesses by members of the Legislature is inflammatory and *utterly false*. At no time during the hearing was any member of either party on the committees disrespectful to any witness. Moreover, I would have to say that, when it comes to aggressive questioning, few witnesses were asked more questions than my co-worker, Dave Hoopman, and I. All questions from all members were welcome and the entire hearing was conducted with civility. With one exception: Near the end of the hearing, one lobbyist for the League of Conservation Voters essentially threatened the committee members by telling them that their votes would be taken down, published and disseminated to their members if they voted "wrong."

I am surprised that a person who did not attend this hearing would make the kind of irresponsible allegations that former Secretary Meyer does in his letter. No witness was berated, I assure you of that. Also, I do not believe that I or other witnesses against the rule were treated with kid gloves. I remember answering some pretty tough questions from Senator Wirch and Rep. Miller. They were good questions, and I enjoyed the opportunity to answer them, but they were not "kid glove" questions.

I want to make clear our association's determination that this rule is ineffective, tremendously costly, and based on pitifully weak "science." The Board should not vote to return this rule to the Legislature.

Most of all, I am extremely upset by George Meyer's false characterization of a hearing he did not even bother to attend. He is the last person who has a right to make the statements he did in his letter to you.

cc: Secretary Scott Hassett, Department of Natural Resources
Members, Senate Environment and Natural Resources Committee
Members, Assembly Natural Resources Committee



Wisconsin Wildlife Federation

720 ST. CROIX ST., SUITE 101, PRESCOTT, WI 54021 • (715) 262-9279 • 1-800-897-4161

AFFILIATED WITH NATIONAL WILDLIFE FEDERATION

October 22, 2003

Tryg Solberg
Natural Resources Board

Re: Mercury Emission Rules

Dear Mr. Solberg:

The Wisconsin Wildlife Federation encourages the Natural Resources Board at its meeting today at Baraboo, Wisconsin to reaffirm its prior decision to adopt mercury emission regulations for utilities in Wisconsin. As the Wisconsin Wildlife Federation testified at your June meeting, this is an important health issue for our members and their families. The sooner that Wisconsin utilities start to implement the reductions called for in the regulations, the sooner there will be less mercury going into our lakes, our fish and our children.

In June of this year you did your job and you did it well. You looked at the science and the policy and you adopted a sound set of rules. Many of us in the conservation community asked for more stringent rules. You listened respectfully to all sides of the matter and you ultimately made a sound and reasoned decision.

The respective Senate and Assembly Committees returned this matter to you for more discussion. **Time is now of the essence. If this proposed set of regulations is not returned back to the Legislature by the end of this month, it may well delay the regulations for over two more years.** The Wisconsin Wildlife Federation, along with the remainder of the petitioners has been patiently waiting for over three years already and this issue has been actively studied for over five years.

In contrast to your studied and respectful review of these regulations, the Legislative review process of this rule was biased, one-sided and extremely disrespectful. A mother of a disabled child, nurses, doctors, fishermen and environmentalists were very aggressively questioned and at times berated by Committee members, often at the end of the day long hearing while utility representatives were given early preference, treated with kid gloves and allowed to speak without time limits.

This issue is no longer one of science and policy, it has become one of hardball politics. That is not your job, that is the job of Secretary Hassett, those in the legislature that support the rule, the many fishing and environmental groups that support the rule and ultimately Governor Doyle. Please complete your job by returning this rule to the

Legislature as recommended by DNR staff and let the remainder of the legislative review process begin. Thank you for your time and seasoned, respectful judgment.

Very truly yours,

George E. Meyer
Executive Director

(NID) JT Letter w/ Johnson in August
Sent letter "unspecified modifications"
[No ^{letter} recommendations!!!]
we did not request

DNR	
NO	- to 80% by 2015
NO	- to Fed exemption (if Fed vote come on let be exempt)
NO	- to trading/banking

Poke in the eye to the legislation

No official letter of recommendations
to DNR yet!!

* No properly notices
* Late call yesterday under Sec's matter
(Like Bd of Regents tactics)

~~Smells~~ Smells Secret Mtgs & Deal w/
Enrico Granger (A press releases today)
Knew B4 we did.

* No Secretary contact w/ the or Johnson
Telecom

Mercury Control and Cost for Major Utilities Summary Sheet

Mercury Control and Cost Estimate

- The cost reflect use of the most promising technology (surrogate technology) to measure mercury control and cost over a specific installation schedule. It is likely that other technologies will emerge with equal capability and a lower cost compared to the surrogate technology.
- The surrogate technology uses combinations of activated carbon injection and a dedicated polishing fabric filter.
- The costs include equipment purchases, installation, operation and maintenance. The surrogate technology preserves 95% of flyash generated by units with the fabric filter system. The lost revenue and disposal cost is included for the remaining unusable portion of flyash.
- A cost range is provided. The "expected" case represents equipment and actions required for mercury control. The "high" case represents additional modifications or action to mitigate potential operational impacts or requirements to achieve the assumed control efficiencies.
- Annual costs anticipate control equipment installations occur from 2010 through 2015 (year 7 through 12 of surrogate installation schedule). The cost ramps up over this time with each additional installation. The annual cost is anticipated to continue from year 12 to 20 based on equipment lifetime. Cost will likely begin to decline after year 20 as equipment or generation units begin to be retired or replaced. No estimate is made of the resulting costs.

Incremental Cost of Surrogate Control Technology

Cost Case	Schedule Year						Outgoing Years	
	2010	2011	2012	2013	2014	2015	2030	2035
	7	8	9	10	11	12	20	25

Million Dollars per Year

Expected	28	30	56	71	81	87	87	<87
High	33	35	66	84	96	104	104	<104

Cents per Kilowatt-hour

Expected	0.06	0.07	0.12	0.16	0.18	0.19	0.19	<0.19
High	0.07	0.08	0.15	0.18	0.21	0.23	0.23	<0.23

Incremental Cost of Surrogate Control Technology to the Average Consumer (dollars per year)

Sector	Unit	Indices	7th Year (\$/year)		12 Year (\$/year)	
			Expected	High	Expected	High
Residential	Household	9,240 kWh/year (1)	6	7	18	21
Commercial	Customer	60,513 kWh/year (1)	37	44	116	138
Industrial	Net Proceeds	0.46 kWh/\$1000 (2)	0.28	0.33	0.88	1.05
	Value Shipped Product	0.21 kWh/\$1000 (3)	0.13	0.16	0.41	0.49

Comparison to Control and Cost of other Pollutants

- The cost of operating the surrogate control technology is comparable to EPA estimates of NOx and SOx control.

Pollutant	Control Efficiency	cents / kWh
Hg	80%	0.19 – 0.23
NOx – Low NOx Burners	50%	0.021 – 0.083
NOx – Selective Catalytic Reactor	80 - 90%	0.185 – 0.361
SOx	80 – 90%	0.6 – 0.8

- In comparison, Wisconsin's current NOx reduction program affects five utility facilities in eight southeast counties. The NOx rule established a 40 – 50% reduction across these facilities with an estimated annual cost of 8 – 10 million dollars per year or 0.03 – 0.04 cents per kilowatt hour. Based on information submitted in a NOx control docket to the Public Service Commission in 2000 it is estimated a statewide NOx rule achieving a 80 – 90% reduction would have an annual cost of 70 – 100 million dollars per year or 0.15 – 0.22 cents per kilowatt-hour. Technology advancements since this time may result in a lower cost.
- A multi-pollutant approach for mercury and any one of particulate, sulfur dioxides, and nitrogen oxide pollutants has the potential to reduce the cost attributed to control of the individual pollutants. Control of particulate and sulfur dioxides is anticipated to be synergistic with mercury control. The control of NOx may provide some benefit but is more independent of mercury control based on current information.

Cost of Monitoring and Determining Compliance

- The cost of compliance determination for the major stationary sources is anticipated to consist of compiling existing data, maintaining records of appropriate fuel consumption or process utilization, and performing calculations necessary to determine mercury emissions. It is anticipated that no or minimal emissions, fuel, or process stream testing will be required to determine annual emissions.
- The cost of compliance determination for the major utilities consists of two separate actions. 1) The initial mercury baseline and unit control efficiency determination. The cost is approximately 490,000 dollars or 12,000 dollars per boiler based on monthly fuel mercury testing in 2004 and one stack emission test. 2) The major utilities begin monitoring and testing in 2008 to demonstrate annual compliance. The annual cost is estimated to be 220,000 dollars or 5,200 dollars per unit based on monthly fuel sampling and stack testing every two years for units larger than 200 MW or every four years for small units.

8/19/03

- Banking (~~and~~ ^{or} Trading)
~~is~~ not allowed in
this rule.

- DWR supports Coal
mercury credit US Suskeetah

- 2008 Kickin for DWR
rule

Start falls

- ① Fed off ramp
- ② Banking (early credits)
- ③ Multi emission agreement
DWR, SOX, and Mercury Credit a-

WB

Mercury Note 8/19/03

- Rule of Just & Utilities
lead to response to
change rules, DWR did
This rule different (Cost
before the house) -
- Utilities don't know
what "review" means.

No certainty

- Multi Emission
Cooperative Agreement

WE made dead line -

Only eligible for SO₂.
Phase I not toward
SO₂. Phase II

-