

**Clean Air Mercury Rule – Wisconsin DNR  
Mercury Reduction Options for Public Comment  
April 2007**

The Natural Resources Board at their March 28, 2007, meeting authorized the Department to hold public hearings on proposed rule revisions related to reducing mercury air emission from coal-fired electricity generation. These revisions, Board Order No. AM-32-05, would allow the Department to implement the federal Clean Air Mercury Rule (CAMR) in Wisconsin and include the following significant provisions:

- Revisions to Chapter NR 440 that adopt the federal New Source Performance Standards (NSPS) requiring mercury emission control technology on coal-fired electric utility steam generating units that are constructed or reconstructed after January 30, 2004.
- Revisions to Chapter NR 446 that repeal certain existing state provisions and instead require each utility with new and existing coal-fired electrical generating units to meet an annual emission cap determined from the state mercury emission budget EPA set for Wisconsin under the CAMR.
- A provision that requires the Department to adopt rules by June 30, 2010, that would require all coal-fired electrical steam generating units affected by the CAMR to reduce their mercury emissions by 90% by January 1, 2020.

These provisions are hereinafter referred to as “Option 1.” **Option 1** is the Department’s primary proposal and is the only alternative that has been fully developed with specific rule language.

In addition to authorizing hearings on AM-32-05, the Natural Resources Board also requested the Department to obtain public comments on other options besides the approach in AM -32-05 for controlling mercury emissions from coal-fired electrical generating units. Three additional specific options (“Options 2, 3, and 4”) are being offered for public comment in addition to AM-32-05. They include:

**Option 2** - Mercury emission reductions of 90 to 95% by January 1, 2012, from all coal burning electrical generating units in the state as requested in a January 2007 Citizen Petition request to the Department - <http://dnr.wi.gov/org/aw/air/pdf/mercurycitizenpetition.pdf>.

**Option 3** - Participation in EPA’s optional national mercury allowance trading and banking program to achieve the reductions required in the federal Clean Air Mercury <http://www.epa.gov/air/mercuryrule/rule.htm>.

**Option 4** - Participation in EPA’s national allowance trading and banking program that would sunset on January 1, 2015. This would allow Wisconsin electric utilities to participate for five years in the national trading and banking program from the inception of the first reduction phase of the CAMR (January 1, 2010).

The table below provides a comparison between AM-32-05 (Option 1), the Citizen Petition (Option 2) and EPA’s national mercury allowance trading program (Option 3). The fourth option, a sunset of participation in EPA’s national program by January 1, 2015, is identical to Option 3. with the exception of a firm expiration date for participation.

	<b>Option 1 - Proposed Rules Authorized for Hearing in March 2007 (AM-32-05)</b>	<b>Option 2 - 2007 Citizen Petition</b>	<b>Option 3 and Option 4 - EPA’s Interstate Banking and Trading Program</b>
<i>General Approach</i>	<p>AM-32-05 establishes mercury emission standards and administrative requirements that demonstrate how Wisconsin will meet the federal CAMR without participation in EPA’s national mercury allowance trading program. This proposal also meets the commitment in the existing state mercury rule to be consistent with the CAMR emission standards and administrative requirements.</p> <p>These proposed revisions also include a provision that requires the Department to adopt rules by June 30, 2010, that would require all coal-fired electrical steam generating units affected by the CAMR to reduce their mercury emissions by 90% by January 1, 2020.</p>	<p>The Citizen Petition requests more mercury reductions sooner than the CAMR requires. Furthermore, the petition requests rules that are consistent with our neighboring states of Illinois, Minnesota and Michigan that achieve a 90% mercury emission reduction from their coal-fired electrical generating units by 2015 or sooner and like many other states have elected not to participate in EPA’s national trading program.</p>	<p>EPA developed a national trading program to achieve the reductions in the CAMR. States have the option of adopting EPA’s program or declining participation and establishing their own approach to ensuring that the state mercury emission budget EPA set is achieved.</p>
<i>Applicability</i>	<p>These provisions apply to new and existing electrical generating units with a nameplate capacity of more</p>	<p>Requests that requirements apply to all coal-fired electrical generating units regardless of nameplate</p>	<p>Same as AM-32-05.</p>

	<b>Option 1 - Proposed Rules Authorized for Hearing in March 2007 (AM-32-05)</b>	<b>Option 2 - 2007 Citizen Petition</b>	<b>Option 3 and Option 4 - EPA's Interstate Banking and Trading Program</b>
	than 25 MWe producing electricity for sale. Cogeneration units serving a generator with a nameplate capacity of more than 25 MWe and providing 1/3 of the unit's output capacity or 219,000 MWh, whichever is greater, are also affected.	capacity.	
<i>Mercury Reductions Required and Schedule</i>	The Wisconsin annual budget for 2010 to 2017 is 1,780 pounds of mercury which represents a 21% mercury reduction from the state baseline EPA established. In 2018 the state mercury budget declines to 702 pounds of mercury, a 69% reduction from the state baseline.	Requests a 90 to 95% reduction in mercury emissions by January 1, 2012, from all coal-fired electrical generating units.	Same as AM-32-05. Under Option 4. however, national trading and banking would not be allowed after January 1, 2015.
<i>Compliance Approach</i>	Mercury emission caps are established for each electric utility system by summing unit specific mercury allowance allocations from a main allocation pool (for existing affected units) and a new unit set-aside (for new affected units). For the purpose of allowance allocation, a unit is considered new if it commenced operation after January 1, 2001.  Within 60 days of the effective date of this rule the Department will notify owners and operators of the annual mercury allowance allocation from the main allocation pool for each of their affected units for 2010, 2011 and	Citizen Petition does not include a specific recommendation.	Under the allowance system in EPA's proposal, owners and operators must hold one allowance for each ounce of mercury emitted in a given year. These allowances can be readily traded from one facility to another across states and allowances can be banked for use in later years. This option would allow Wisconsin electric utilities to purchase or sell mercury allowances outside the state.  Wisconsin utilities would receive mercury allowance allocations by an approach similar to what is proposed under AM-32-05

	<b>Option 1 - Proposed Rules Authorized for Hearing in March 2007 (AM-32-05)</b>	<b>Option 2 - 2007 Citizen Petition</b>	<b>Option 3 and Option 4 - EPA's Interstate Banking and Trading Program</b>
	<p>2012. Beginning in 2009 and thereafter written notifications by October 31<sup>st</sup> would be provided of the Department's determination of mercury allowance allocations from the main allocation pool for the year four years in the future. The new unit set-aside allocations are available upon request. Annually, written notifications of new unit set-aside allocations will be provided by June 30<sup>th</sup> for those requests received by May 1<sup>st</sup>. Any mercury allowances remaining in the new unit set-aside that are not allocated in a given year would be retired. Within 45 days of providing written notifications for allocations from the main allocation pool or new unit aside the Department would issue administrative orders to owners and operators receiving allocations.</p>		
<p><i>Monitoring, Reporting and Recordkeeping Requirements</i></p>	<p>Includes the requirements in the federal CAMR for installation of continuous emission monitors (CEMS) or carbon sorbent traps for the measurement of total mercury. On-line systems similar to EPA's Acid Rain Program would be used for information management and emission reporting. Low emitting sources, those that emit no more than 29 pounds of mercury per year, will</p>	<p>Citizen Petition does not include a specific recommendation.</p>	<p>Same as AM-32-05.</p>

	<b>Option 1 - Proposed Rules Authorized for Hearing in March 2007 (AM-32-05)</b>	<b>Option 2 - 2007 Citizen Petition</b>	<b>Option 3 and Option 4 - EPA's Interstate Banking and Trading Program</b>
	only be required to conduct periodic stack emission testing.		
<i>Allowance Allocation Methodology</i>	<p>Allocations are distributed to affected units through an energy output based methodology that does consider coal type.</p> <p>From 2010 to 2017, 95% of the state phase 1 emission budget of 1,780 pounds would be allocated to existing units in ounces of mercury (27,056 ounces). After 2018, 95% of the 702 pound per hour state phase 2 emission budgets would be allocated to affected units (10,670 ounces). The portion of the state emission budget remaining would be placed in a new unit set-aside accessible by owners and operators by request. For 2010 through 2017 the new unit set-aside is 1,424 ounces (89 pounds) and beginning in 2018 and thereafter 562 ounces (35 pounds). The new unit set-aside is 5% of the total state emission budget.</p>	Citizen Petition does not include a specific recommendation.	Mercury emission reductions from certain coal types have been demonstrated to be difficult to achieve. EPA recommends a heat input based allocation approach that provides additional allowances for those coal types. EPA proposes an allowance allocation approach that initially provides 95% of a state's allocation for existing units and 5% is set aside for new units. Their new unit set aside declines to 3% and existing units receive 97% of the state budget beginning in 2015.
<i>Finding under s. 285.27(2)(b) Wis. Stats.</i>	Adopting a standard to protect public health and welfare for a hazardous air pollutant for which EPA has not yet acted requires the Department to make a finding including written documentation that includes a public health risk assessment.	The finding under s. 285.27(2)(b) would be needed to establish the mercury reduction level and schedule in this option.	A finding is not required to adopt EPA's Interstate Banking and Trading Program.

	<b>Option 1 - Proposed Rules Authorized for Hearing in March 2007 (AM-32-05)</b>	<b>Option 2 - 2007 Citizen Petition</b>	<b>Option 3 and Option 4 - EPA's Interstate Banking and Trading Program</b>
	This finding would be needed in conjunction with future rulemaking to achieve a 90% reduction by January 1, 2020. The finding is not required to adopt AM-32-05.		

# Before The State of Wisconsin Department of Natural Resources

PETITION BY CITIZENS FOR THE  
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

Citizen Rules Petition  
Docket No. \_\_\_\_\_

TO: The Secretary of the Department of Natural Resources, and  
The Natural Resources Board  
P.O. Box 7921  
Madison, Wisconsin 53707

The undersigned citizens of the State of Wisconsin hereby petition the Wisconsin Department of Natural Resources (WDNR) and the Natural Resources Board to conduct rulemaking proceedings to revise and adopt rules which require a 90 percent or greater reduction of mercury emissions to the air, which are subsequently deposited in surface waters and bioconcentrate in game fish, from all coal and oil burning electric utility steam generating units in the state under the authority given to the Department in section 285.11 (9) Wis. Stats.

This petition is filed pursuant to the provisions of 227.11 (2) (a) and 227.12 (1) and (2), Wis. Stats., and Wisconsin Administrative Code NR 2.05. A petition for rulemaking must state the substance or nature of the rule requested, the reason for the request, the petitioners' interest in the requested rule, and a reference to the agency's authority to promulgate the requested rule, 227.12 (2), Wis. Stats. This petition fulfills these requirements and describes why rule changes are urgently needed.

## I. PETITIONERS

Petitioner Keith Reopelle joins in this petition individually as a life-long Wisconsin angler with children who would like to eat more fish and in his capacity as the Program Director of Clean Wisconsin. Clean Wisconsin is a nonprofit public interest organization concerned with protecting and restoring Wisconsin's lakes, rivers, wildlife and public health. Clean Wisconsin has more than 10,000 members statewide, many of which have

a vested interest in clean lakes and rivers and their ability to utilize fish and wildlife resources as a source of both enjoyment and food for their families.

George Meyer is signing onto this Petition as Executive Director of the Wisconsin Wildlife Federation. The Wisconsin Wildlife Federation, comprised of over 150 hunting, fishing and trapping groups, has long supported the reduction of mercury into the environment. Those 150 organizations represent over 100,000 hunters, anglers and trappers in the State of Wisconsin. The Federation, on behalf of its members, is greatly concerned about the presence of mercury in the air, lakes and streams, and fish which are ultimately consumed by its members and their families who are avid anglers. Fish contaminant advisories restrict the use of the state's fisheries which are mainly financially supported by the hunting, fishing and license dollars paid by the Federation's members and other sportsmen and women.

Petitioner Eric Skindzelewski joins as President of the Lakeshore Fisherman Sports Club Ltd. The Lakeshore Fisherman Sports Club has worked to achieve greater public access to lake shores and clean water for about 20 years. Today, the club works to foster the enjoyment and care of water resources and the natural environment in the next generation of anglers. LFSC's concern about children and the resources they will inherit provides the impetus for their involvement in this petition. Clean water to fish and safe fish to eat are rights that should be passed to the next generation. LFSC's believes it is WDNR's responsibility to protect these resources for the future, including preventing excessive mercury contamination in the waters where their members catch fish to eat.

Petitioner Gerald Ernst joins this petition as the President of the Wisconsin Division of the Izaak Walton League. The Izaak Walton League of America, formed in 1922, is dedicated to common-sense solutions for protecting our country's natural heritage and improving outdoor recreation opportunities for all Americans. Throughout Wisconsin, IWLA chapters work to advance this mission and help instill a conservation ethic in outdoor recreationists. IWLA believes it is the responsibility of the state natural resources agencies to uphold the public trust doctrine as it applies to lakes and rivers of the state. The IWLA also believes the public trust doctrine does little good if the state agencies are not able to take the necessary actions needed to keep waters clean and fish safe to eat. It further maintains that the mercury emission rules requested in this petition are critical to making fish and game safe to eat and to avoid the adverse health impacts of this highly toxic metal which threatens hunters, anglers and their families.

Petitioner Gary Engberg joins in this petition as a professional angler, fishing guide and owner of Gary Engberg Outdoors, an outdoor production company. He is one of many licensed fishing guides whose economic livelihood relies on a healthy fish population. Gary guides on many waters with historically high levels of mercury including lakes Monona, Waubesa, the Wisconsin River and its flowages, and knows firsthand that reducing mercury emissions as much as possible is critical to the future of Wisconsin's sport fishing economy.

Petitioner Eric Uram joins this petition individually as a fisherman and board member of the Yahara Fishing Club. He has fished throughout the continent for 47 of his 50 years. As founder of Mercury Free Wisconsin, the Past President of the Lake Superior Alliance, and YFC board member; his concerns include greater areas than just waters under the direct jurisdiction of the State of Wisconsin. Mercury pollution emitted in Wisconsin will ultimately affect the environment somewhere. The greatest likelihood is that this pollution will affect local and regional waters. Wisconsin's name comes from Native American terms meaning "Land of Gathering Waters." Wisconsin shares responsibility for protecting the water quality at the headwaters of the two greatest watersheds in North America – the Mississippi River and the Great Lakes. Wisconsin also shares responsibility for establishing the quality of protections for these waters throughout their watersheds. Keeping up with leading states on mercury controls, many of which neighbor Wisconsin and share responsibility for these waters with us, allows for an improved regional approach to solving the mercury problem that plagues the fish found in all our lakes and streams.

Petitioner Ted Lind joins in this petition individually as a life-long angler and as President of the Wisconsin Council of Sport Fishing Organizations (WCSFO). The WCSFO serves as a voice for its more than 50 sport fishing organization members. On behalf of those members, WCSFO strongly supports the requested rules recognizing that making sport fish safe for children and future generations is critical to ensuring a bright future for sport fishing in Wisconsin

Petitioner Russ Ruland joins in this petition individually as a lifelong Wisconsin fisherman who is concerned about the danger of eating fish from Wisconsin waters. As President, and on behalf of, the 150 member Muskellunge Club of Wisconsin, he is also concerned about the effect of mercury contamination on the natural reproductive capacity of our fish and wildlife.

Petitioner Maria Powell joins in this petition as a fish consumer and as the Executive Director of the Madison Environmental Justice Organization, a multicultural organization dedicated to addressing environmental health issues, particularly those that inordinately affect minorities and poor. Extensive studies show that subsistence anglers, particularly people of color, depend on fish as a food source and yet are often unaware of existing fish advisories. Fishing is an important cultural activity among many of these groups, and studies show that they often eat more fish from local waters than advisories recommend. As health studies become more sophisticated, they continue to show damaging health effects at increasingly lower exposure to mercury. Therefore it is imperative that mercury pollution in our waters be reduced through revision of these rules.

Petitioner Barb Frank joins the petition as a mother and grandmother who is deeply concerned about the health and well being of our children and serves on the Executive Committee of the John Muir Chapter of the Sierra Club. The Sierra Club is America's oldest, largest and most influential grassroots environmental organization with over 14,000 members in the John Muir WI Chapter alone and over 700,000 members nationally. Inspired by nature, Sierra Club members work together to help protect our

communities and the planet. Sierra Club feels it is morally unconscionable to delay mercury clean-up from coal fired power plants thereby exposing children to the potential of serious neurological harm when we could be doing so much more to protect them. We can fix this problem and we must do so. Delay is not acceptable.

Petitioner Matt Wallace joins in this petition individually as a recreational angler and as Environmental Associate with the Wisconsin Public Interest Research Group. WISPIRG is a statewide non-profit, citizen based, public interest advocacy organization with over 9,000 members in Wisconsin. On behalf of its members, WISPIRG strongly supports rules that will reduce mercury pollution to the benefit of public health, wildlife health, and the recreational fishing culture and economy in Wisconsin.

## II. NATURE OF REQUESTED RULES

The petitioners respectfully request that the Department of Natural Resources and the Natural Resources Board promulgate changes to NR 446 that:

1. Require a 90 to 95 percent reduction in mercury emissions from all coal burning electric generators no later than January 1<sup>st</sup> 2012;
2. Are consistent with the model rule developed by the State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO) as described in their written testimony at the United States Environmental Protection Agency's (EPA's) November 17, 2005 hearing in Research Triangle Park NC as part of Docket ID No. OAR-2002-0056.
3. Are consistent in their impact with the regulations in place, or under development, in the neighboring states of:
  - a. **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;
  - b. **Minnesota**, adopted a law requiring a **90 percent reduction** by 2009 or 2014 at each plant depending on the existing PM control technology;
  - c. **Michigan**, developing regulations that require a **90 percent reduction** across all plants by 2015.
4. Are consistent with Connecticut, Illinois, Maine, Maryland, Michigan, New Hampshire, New Mexico, New York, Pennsylvania, in electing to not participate in the national interstate trading program.

## III. REASONS FOR THE REQUEST

There are several compelling reasons for revision and adoption of the state's power plant mercury regulations as described above:

- Substantial new data and information on mercury control technology have become available since NR 446 was established in 2004 that support a significantly stronger regulation.
  - NR 446 as promulgated and established in November of 2004 recognizes and anticipates the need for adjustments in the rule such as those requested in this petition.
  - The Federal Clean Air Mercury Rule (CAMR) that DNR is considering adopting was developed illegally.
  - Substantial new data and information on the extent and degree of harmful health impacts to the citizens of Wisconsin have become available since NR 446 was established in 2004.
1. Substantial new data and information on mercury control technology have become available since NR 446 was established in 2004 that support a significantly stronger regulation.

During the development of Wisconsin's power plant mercury regulations utilities and their lobby associations consistently made 5 arguments in response to the DNR's initial proposed rule which required a 90 percent reduction by 2015:

- a. A 90 percent reduction is not technically feasible with control technology, or at the very least that such technology is not commercially available;
- b. A 90 percent reduction requirement would, therefore, result in massive fuel switching to natural gas;
- c. A 90 percent reduction requirement would cost Wisconsin ratepayers several billion dollars a year in increased rates;
- d. A 90 percent reduction requirement will jeopardize electric reliability;
- e. A Wisconsin state-only regulation will not result in any fewer fish consumption advisories (presumably suggesting that it, therefore, is of little human health value).

In less than two years since the adoption of NR 446 in October of 2004 it is now quite clear that all of these arguments are completely without merit (in the first four cases) or irrelevant (to the last point).

Control Technology

In 2002, the DNR’s summary of their Technical Advisory Group’s analysis of control technology and options focused on the co-benefits of existing technology for other pollutants such as scrubbers and fabric filters, the “emerging” activated carbon injection technology in combination with existing pollution control equipment, and “developing” technologies such as alternative sorbents.

EPA’s initial assessment of mercury emissions and the ability for existing pollution control equipment (installed for control other pollutants) to reduce emissions – Information Collection Request (ICR) – conducted in 1999, showed that mercury was more easily captured by existing (installed) controls on power plants that utilized bituminous (eastern, often higher sulfur) coal. That data also revealed that scrubbers (for removing sulfur) were among the better performing of the installed controls (no Wisconsin plants had scrubbers, the first was recently installed on one of the two Pleasant Prairie boilers); and that fabric filters (for particulate control) work better than ESPs. Nearly all of Wisconsin’s plants employ ESPs rather than fabric filters.

The following table from a 2005 U.S. Department of Energy, National Energy Technology Laboratory (DOE/NETL) report shows the average co-benefit mercury capture for different coal types and different existing air pollution control devices (APCD) for capturing particulates:

<b>Existing APCD</b>	<b>Bituminous</b>	<b>Blended</b>	<b>Subbituminous</b>	<b>Lignite</b>
CS-ESP	36%	21%	3%	-4%
SDA-FF	98%	N/A	24%	0%

Furthermore, the first full-scale demonstrations of the clear leading candidate for mercury removal, carbon injection, including a demonstration at Pleasant Prairie, showed that carbon injection is also likely to perform better with bituminous coal, and in conjunction with a fabric filter. The first full-scale test in 2001 at the Gaston plant in Alabama, which burns bituminous coal and employs a fabric filter, achieved a 90 percent mercury reduction over short periods of time. While the demonstration runs at Pleasant Prairie with Powder River Basin subbituminous (low-sulfur) coal and an ESP particulate collector achieved mercury removal rates in the 60 to 70 percent range. More than 80 percent of the coal burned in Wisconsin is western, low-sulfur subbituminous coal; much of it Powder River basin coal.

However, in most, if not every respect, the development of this control technology (for mercury removal) is proceeding like any other pollution control technology. During the rule development one industry lobby group mantra was that there were no effective (or at least 90% effective) mercury (specific) control technologies “commercially available.” Of course there wasn’t; mercury emissions from coal plants were never regulated before. We weren’t surprised that nobody had previously invested millions of dollars in a technology that had no market. At the recent 8<sup>th</sup> Annual International Conference on Mercury as a Global Pollutant a representative of the Institute for Clean Air Companies, a trade organization for the corporations that manufacture pollution control technology, stated that multiple vendors have carbon injection systems available for purchase and that

21 such systems have been ordered (sold) to date. The number of systems order is now up to 27., The fact that mercury control devices are being sold commercially should be proof that they are commercially available.

At one of the DNR’s public hearings on their initial NR 446 draft (requiring a 90% reduction by 2015) in the fall of 2001, a representative of ADA-ES, a commercial manufacturer of power plant air pollution control technology, described the state of pollution control technology – sorbent injection – development at that time and stated that he fully expected that technology to be in place to meet the proposed rule’s 90 percent reduction by 2015. Since that day his company, many other private venders, utilities, research institutes and governmental agencies have conducted a great deal of research and demonstration on existing power plants. The table below describes 41 full-scale sorbent injection tests at existing power plants throughout the country that have been completed or at least initiated between 2001 and today.

<b>Power Plant</b>	<b>Coal type</b>	<b>Existing equipment</b>	<b>Status</b>
Gaston	Low-S bituminous	Fabric filter	complete
Pleasant Prairie	Powder river basin	Cold-side ESP	Complete
Brayton Point	Low-S bituminous	Cold-side ESP	Complete
Abbott	High-S bituminous	C-ESP/FGD	Complete
Salem Harbor	Low-S SA Bit	C ESP	Complete
Stanton 10	ND lignite	SDA/fabric filter	Complete
Laskin	Powder river basin	Wet P Scruber	Complete
Coal Creek	ND lignite	C ESP	Complete
Gaston	Low-S bituminous	Fabric filter	Complete
Holcomb	Powder river basin	SDA/fabric filter	Complete
Stanton 10	ND lignite	SDA/fabric filter	Complete
Yates 1	Low-S bituminous	C ESP	Complete
Yates 2	Low-S bituminous	ESP/FGD	Complete
Leland Olds	ND lignite	C ESP	Complete
Meramec	Powder river basin	C ESP	Complete
Dave Johnston 3	Powder river basin	C ESP	Complete
Leland Olds	ND lignite	C ESP	Complete
Portland #1	Bituminous	C ESP	In progress
Brayton Point	Low-S bituminous	C ESP	Complete
6 commercial tests	Low-S bituminous	ESP	In progress
Laramie River	Powder river basin	SDA/ESP	In progress
Conesville	High-S bituminous	ESP/FGD	In progress
DTE Monroe	PRB/bituminous	ESP	Complete
Antelope Valley	ND lignite	SDA/fabric filter	In progress
Stanton 1	ND lignite	C ESP	In progress
Council Bluffs 2	Powder river basin	Hot-side ESP	In progress
Louisa	Powder river basin	Hot-side ESP	In progress

Independence	Powder river basin	C ESP	In progress
Gavin	High-S bituminous	C ESP	In progress
Presque Isle	Powder river basin	Hot-side ESP TOX	In progress
Allen Duke	Low-S bituminous	CS ESP	Complete
Lausche Ohio U	High-S bituminous	CS ESP	Complete
Merrimack PSNH	High-SO3 Bit	HS ESP	Complete
Cliffside Duke	Low-S bituminous	Hot-side ESP	Complete
Buck Duke	Low-S bituminous	Hot-side ESP	Complete
St Clair Detroit Ed	Subbitum blend	Cold-side ESP	Complete
St. Clair Detroit Ed	Subbituminous	Cold-side ESP	Complete
Stanton 1 GRE	Subbituminous	Cold-side ESP	Complete
Stanton 10	Lignite	SD/FF	Complete
Stanton 10	Lignite	Cold-side ESP	Complete
Miami Fort	Med-S bituminous	Cold-side ESP	In progress

Multiple full-scale demonstrations on each of the different coal types and existing control equipment configurations are an important phase of the technology development; but once initial tests and demonstrations had uncovered the challenges, the pollution control manufacturing industry and research institutions quickly turned their attention to the western subbituminous coal burning plants. DOE/NETL initiated 20 of the projects listed above in 2004 with completion dates in 2006 including several units that burn subbituminous coal and employ ESPs. DOE/NETL initiated another 14 demonstration projects in 2005 with completion dates in 2007. Efforts were quickly rewarded as halogenated treatments of the carbon proved more effective for removing subbituminous coal. Stanton 1, St. Claire, Holcomb Station Unit 1, Meramec, and Pleasant Prairie all showed promise to achieve 90 percent reduction with subbituminous coal.

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.

### Cost of Control

Cost is another area that Wisconsin utilities made predictions that already, just a few years later, appear to be wildly inaccurate, off by orders of magnitude. There is a relatively predictable pattern of cost changes associated with pollution control (or any other) equipment and regulatory schemes that basically follows the pattern of higher initial costs that fall over time as innovation addresses technical challenges, economies of scale reduce production costs and competition pushes all costs downward.

Alliant, in its testimony on the original NR 446 draft rule dated October 15, 2001 estimated that a 90% control level would result in a .26 \$/kWh increase which translated into an annual increase of \$2,059 for their average residential customer and over \$1 million increase for their average industrial customer. Even a 50 percent reduction in

mercury emissions, (presumably based on projected carbon injection costs), according to Alliant, would cost .044 \$/kWh or \$348 a year for their average residential electric bill.

Wisconsin Manufacturers & Commerce stated in a fact sheet entitled: DNR Mercury Rule: “A Fish Story” Know the Facts that “Conservative estimates show the rule will increase electric rates by \$1.1 billion, for only the first two of three phases. Some utilities have estimated the cost of the rule at upwards of \$3.3 billion.”

If you do the math on these very large sounding numbers, for the state as a whole, you arrive at costs that a lot of people would probably be willing to pay to add even a small degree of protection for the development of their children’s brains and nervous systems. However, these relatively high cost estimates are presumably the result of massive conversion of coal plants to natural gas, a theory based on the “commercial unavailability” of mercury-specific control technology. Actual costs in full-scale demonstrations have been a tiny fraction of these numbers. Even the highest cost of the control technologies demonstrated in the table below translate to a ball park 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. A bit less than the \$2,000 a year predicted by Alliant. In fact, the capitol costs of the mercury control technologies are minuscule compared to that of other pollutants regulated under the Clean Air Act for many years. The capitol 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

These important tests were completed just as NR 446 was established. Recall that NR 446 was established on October 1<sup>st</sup>, 2004. St. Clair Station Unit 1 demonstration was completed in October of 2004, Meramec Station Unit 2 was complete in November of 2004.

2. NR 446 as promulgated and established in November of 2004 recognizes and anticipates the need for adjustments in the rule such as those requested in this petition.

NR 446.12 Periodic Evaluation and Reconciliation Reports require that the DNR periodically assess the rule implementation and the appropriateness of the requirements; specifically the reports must 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 the requirements of s. NR 446.06 are achievable, given the scientific and technological developments.
- c. Recommendations for revisions to this chapter or other actions based on the scientific and technological developments.
- d. An assessment of the impact of the compliance alternatives on mercury concentrations in locally affected water bodies.

The first such report was due January 1<sup>st</sup> 2006. NR 446.12 (2) also requires a report within 6 months of promulgation of federal regulations comparing the federal and state regulations and making recommendations for revisions to reconcile the requirements.

On March 20, 2006 Secretary Hassett forwarded a memorandum to the Natural Resources board with the subject line: “State Mercury Rule Periodic Evaluation and Reconciliation Report, apparently fulfilling the requirements of NR 446. 12. The report details the differences between the state and federal rules and discusses planned state rule revisions to reconcile the two rules. However, the report is woefully inadequate in its treatment of the enumerated items under subchapter (1) above.

It’s evaluation of the scientific and technology developments for controlling mercury barely scratches the surface of R&D that has taken place and fails to mention the most important findings for Wisconsin. While dozens of control technology pilots and test had progressed and many had been completed since the NR 466 was established, the DNR’s report mentioned only one – the DOE/WE Energies TOXECON application at Presque Isle Generating Station in Marquette Michigan. The report fails to even mention the numerous full-scale tests of treated sorbents including halogenated and brominated activated carbon which make it very clear at this point that plants equipped with only an ESP that burn subbituminous coals (most plants in Wisconsin) can achieve a 90 percent or greater mercury reduction.

The report does not address, as required in sub (1) b. above, whether the requirements of NR 446 are achievable. If it did, it would have undoubtedly pointed out that not only are the requirements of Wisconsin’s rule achievable, much more is achievable as Illinois, Michigan and Minnesota have all recently recognized.

The report also ignores requirement (1) c. above and fails to make any recommendation of the basis of the scientific and technology developments. Since those technology

developments have quickly outpaced the requirements of NR 446, the obvious recommendations would be along the lines of those outlined in this petition.

Lastly, the report ignores (1) d. above which requires assessment of the rule's compliance alternatives on mercury levels in the state's waters. While this question is much more difficult to answer, and it is unlikely that the Department's budget has allowed much in the way of repetitive fish testing in state waters, it is safe to say that a 90 percent or greater reduction will have a greater impact on reducing mercury in state waters than the current rule. It is also noteworthy that the recent action of immediately upwind states, Minnesota and Illinois, increase the likelihood of a measurable reduction in the future.

3. The Federal Clean Air Mercury Rule (CAMR) that DNR is considering adopting was developed illegally.

In 1990 Congress amended Section 112 of the Clean Air Act to create a pollution control program for nearly 200 pollutants classifying them as "hazardous air pollutants" or HAPs including mercury, chromium, arsenic and a host of other toxins emitted by coal-burning power plants. In doing so, Congress directed EPA to make a list of all of the major sources and develop restrictive regulations known as "maximum achievable control technology" or MACT standards for each category of sources (each industry sector). Section 112 of the Clean Air Act specific prohibits the use of interstate trading programs to reduce HAP emissions. Recognizing the large quantities of numerous toxins emitted by power plants, Congress instructed EPA to study the toxic emissions of power plants separately, report back to congress on their findings and regulate power plants under the section 112 HAP program if "such regulation is appropriate and necessary."

After spending years reviewing volumes of scientific evidence EPA published its study and recommended on December 20, 2000 that it is "appropriate and necessary" to regulate power plants under section 112 of the Clean Air Act. By adding power plants to the list of sources in section 112 EPA established a mandatory requirement to develop MACT standards for power plants within two years. EPA's authority, under the Clean Air Act, for removing pollutants from the section 112 list of sources is very strictly limited and requires specific determinations that the pollutant is not a threat to human health and the environment. The only determination that EPA has made regarding mercury emissions from power plants to date states just the opposite, that power plant mercury emissions pose a major threat to human health and the environment.

On March 15<sup>th</sup> of 2005 EPA issued long-awaited regulations (under section 111 of the Clean Air Act) for mercury emissions from coal-fired power plants that aimed to reduce emissions by just under 70 percent by 2018 with the use of a cap and trade program. Simultaneously, in a separate but related action, EPA revised and reversed its December 2000 finding that it was "appropriate and necessary" to regulate coal- and oil-fired coal-fired power plants under section 112 of the Clean Air Act, without any additional analysis that refuted the health risks identified in the initial report to congress. In fact, a variety of studies conducted since the original EPA report to Congress, including some

here in Wisconsin (referenced below) served to confirm the health risk findings of that initial EPA study.

Before the end of March, 2005, the attorney generals in nine states – New Jersey, California, Connecticut, Maine, Massachusetts, New Hampshire, New Mexico, New York and Vermont – filed a lawsuit challenging the new EPA rule on the grounds that it violates the Clean Air Act and fails to protect children from the toxic effect of mercury.

New Jersey Attorney General Peter Harvey said, "We are dedicating our legal resources to fight EPA's new rule, which fails to protect our children from toxic mercury emissions. It is an established medical fact that mercury causes neurological damage in young children, impairing their ability to learn and even to play. EPA's emissions trading plan will allow some power plants to actually increase mercury emissions, creating hot spots of mercury deposition and threatening communities." Seven other states subsequently joined the lawsuit: Delaware, Illinois, Maine, Massachusetts, Michigan, Minnesota, Pennsylvania, Rhode Island, and Wisconsin.

In response to the initial legal challenge EPA agreed to reconsider certain aspects of the rule and requested additional public input. However, on May 31, 2006 EPA announced it would move forward with the cap and trade program (rather than developing the MACT standard as required by the Clean Air Act) and the final rule was published on June 9<sup>th</sup>. The 16 states filed a new lawsuit on June 19<sup>th</sup> of last year, pointing out that EPA's reconsideration of the regulation only weakened it further.

"Mercury is a potent neuro-toxin and we should do everything possible to reduce the public's exposure to it," said New York Attorney General Eliot Spitzer. "I am disappointed that the EPA continues to take a regulatory approach that conflicts with the Clean Air Act. Our lawsuit seeks to make sure this issue is handled as the law requires, leading to improved public health and environmental protection."

"After six months of stalling, EPA not only failed to address the grave dangers posed to communities and children by its cap-and-trade program for mercury emissions, it made the program worse by further weakening standards," said New Jersey Attorney General Zulima Farber. "We are moving forward in court to fight these rules, which do not meet the mandate of the Clean Air Act."

Five Environmental groups and four Native American Indian tribes have also filed a lawsuit challenging the cap and trade program.

More than one independent and objective analysis of the process EPA used to develop its mercury regulations and the result it yielded agree that the process was flawed the result fell short of what is needed to protect our children's health and does not comply with the Clean Air Act.

Before finalizing their regulations, EPA issued a draft rule with two policy options, the technology based (MACT) standard, and the cap-and-trade option. In February 2005 the

U.S. Government Accountability Office (GAO) published a report entitled “Observations on EPA’s Cost-Benefit Analysis of Its Mercury Control Options.” The summary of what GAO found states: “GAO identified four major shortcomings in the economic analysis underlying EPA’s proposed mercury control options that limits its usefulness for informing decision makers about the economic trade-offs of the different policy options.” The report described four ways in which the EPA failed to assess the merits of the cap-and-trade program versus the technology standard. The report goes to say that EPA “used inconsistent approaches;” “EPA did not adhere to the principles of full disclosure and transparency;” and “According to EPA, its analysis did not estimate key mercury-related health benefits.”

Similarly, the U.S. EPA Office of Inspector General found the process for developing the regulations flawed in a number of ways that stacked the deck in favor of the cap-and-trade approach: “...we believe EPA’s approach for developing the MACT floor was compromised.” “We also found that EPA’s rule development process did not comply with certain Agency and Executive Order requirements, including not fully analyzing the cost-benefit of regulatory alternatives and not fully assessing the rule’s impact on children’s health.”

On March 7, 2005, Senator Leahy and 29 other Senators summarized these concerns in a letter to EPA:

“The lack of analysis of the health impacts of mercury on children by EPA in this rulemaking process is alarming and should be corrected before EPA issues a final rule on mercury air emissions. Unfortunately, the IG and GAO found other serious concerns with EPA’s rulemaking process on mercury. The IG found that:

EPA senior management instructed EPA staff to develop a maximum achievable control technology (MACT) standard for mercury that would result in national emissions of 34 tons annually, instead of basing the standard on an unbiased calculation of what the top performing units were achieving in practice. (EPA IG report, “Additional Analysis of Mercury Emissions Needed Before EPA Finalizes Rules for Coal-Fired Electric Utilities,” Feb. 3, 2005, p. 11)

“By instructing EPA staff to ignore the top performers and to base the standard on an arbitrary 34-ton annual emissions limit, these EPA senior managers failed to carry out the MACT requirement under the Clean Air Act, directing staff to be arbitrary and capricious in arriving at a standard. These actions violate sections 112(d) and 307(b) of the Clean Air Act. Both the IG and the GAO criticized the EPA for failure to follow Executive Order 12866 on Regulatory Review, which requires agencies to analyze and present cost and benefit estimates for all regulatory alternatives. GAO writes:

EPA’s initial economic analysis of the two policies that it is considering has a number of shortcomings. Specifically, because EPA did not analyze and document the economic effects of each policy option by itself ...the results cannot be meaningfully compared. Further, without monetary estimates of the human health benefits of mercury emissions reductions – a primary purpose of a mercury regulation—over the full implementation period of each option, or at a minimum, qualitative comparison of these benefits, EPA’s analysis does not provide

decision makers with a strong basis for comparing the net benefits...Unless EPA conducts and documents further economic analysis, decision makers and the public may lack assurance that the agency has evaluated the economic tradeoffs of each option and taken the appropriate steps to identify which mercury control option would provide the largest net benefit.” (GAO Report “Clean Air Act Observations on EPA’s Cost-Benefit Analysis of Its Mercury Control Options,’ p. 16).”

The State and Territorial Air Pollution Program Administrations (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO), associations of state regulators, stated in a November 16, 2005 letter: “As we have commented in the past, we believe EPA’s rules addressing emissions of hazardous air pollutants from electric utilities, published on March 29, 2005, are inadequate to protect public health and the environment. Specifically, the emission limits contained in EPA’s Clean Air Mercury Rule are much weaker than the Clean Air Act and the deadlines are far too protracted. Additionally, the law clearly called for a technology-based regulation under Section 112 to reduce emissions of hazardous air pollutants, including mercury, from power plants; EPA’s cap-and-trade approach under Section 111 is inconsistent with the mandates of the law.” The STAPPA/ALAPCO associations developed their own model regulation that they urge states to adopt for their federal rule requirement. The model rule would require an 80 percent reduction of mercury by 2008 and a 90 to 95 percent reduction by 2012.

The root of the problem with EPA’s drafting of the federal mercury rule in order to deliver a regulation that is utility friendly to a degree not obtainable if one follows the Clean Air Act may have been the relationship between Senior EPA staff and Washington utility lobbyists. This became apparent when it came to light that portions of EPA’s proposed rule were actually written by utility lobbyists. On January 31<sup>st</sup>, 2004, the Washington Post reported in an article entitled “**Proposed Mercury Rules Bear Industry Mark**”:

*“A side-by-side comparison of one of the three proposed rules and the memorandums prepared by Latham & Watkins -- one of Washington's premier corporate environmental law firms -- shows that at least a dozen paragraphs were lifted, sometimes verbatim, from the industry suggestions. Environmental Protection Agency officials dismissed the matter as largely an interagency mix-up that had little to do with shaping the administration's centerpiece proposal for forcing power plants to reduce mercury emissions 70 percent by 2018. They said the law firm language that turned up in the proposed rule published in the Federal Register was related to an alternative proposal that the administration does not support. "That's not typically the way we do things, borrowing language from other people," said Jeffrey Holmstead, head of the EPA's air policy office. "But it came to us through the interagency process." Claudia M. O'Brien, lead writer of the Latham & Watkins memos, said it was "gratifying" that the EPA found the firms' analysis persuasive, but that "we didn't ask EPA to cut and paste our analysis into their [rule-making] preamble.”*

4. Substantial new data and information on the extent and degree of harmful health impacts to the citizens of Wisconsin have become available since NR 446 was established in 2004.

In 2001 the Center for Disease Control (CDC) published its National Health and Nutrition Examination Survey taken in 1999 (NHANES 1999). This study confirmed that adverse health impacts including mental development in newborns and young children is extremely pervasive in the United States. Given that fishing and eating fish is a strong cultural mainstay in Wisconsin we can safely assume that the percentage of women at risk of impacting their unborn children through their own mercury body burden is similarly high. However, no concrete Wisconsin specific study had ever been conducted, until last year.

The Wisconsin Department of Health and Family Services (DHFS) tested the mercury levels in the hair of 2000 Wisconsin adults between January 2004 and June of 2005. The fish eating habits of participants ranged from those who didn't eat any fish to one individual who ate fish on average twice a day prior to the hair testing. Mercury levels in the hair ranged from .012 to 15.2 ppm and were correlated with fish consumption. The EPA, DNR and DHFS all recognize 1 ppm as the level above which there is risk of neurological health impacts to children and fetuses of pregnant women. DHFS researchers found that 29 percent of all men tested, and 13 percent of all women had mercury levels above 1 ppm. Thirteen percent of all women of childbearing ages also had levels that put them at risk. These findings are very consistent with CDC's finding for the nation as a whole and mean that more than one in every eight women in Wisconsin has levels of mercury in their bodies today that puts their child at risk for neurological damage if they are pregnant. If we look at the number of children born in Wisconsin each year and do a direct extrapolation of these numbers we find that as many as 9,000 children are born each year in this state with a risk of starting life with a lower I.Q., reduced memory function, reduced attention span and other adverse neurological impacts.

It is important to note that the simplistic estimate above of children at risk in Wisconsin is undoubtedly a conservative estimate because the DHFS study did not include a sample population that is representative of the state's actual population. There are sub-populations, communities, in Wisconsin where fish consumption is much higher than that for most Wisconsinites. The best examples are the Native American Tribes of Northern Wisconsin. For the six Ojibwa tribes of northern Wisconsin, eating large numbers of game fish, especially walleye, is a critical social, physiological, economic, political, cultural and spiritual aspect of their very existence. Researchers with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) estimate that Ojibwa women eat, on average, three times as many fish as white people in Wisconsin. Yet there were no Native Americans included in the DHFS study.

DHFS conducted another important study since NR 446 was adopted. In July of 2005 the Environmental Research journal published a report that documented 7 case studies of methylmercury exposure in adults in Wisconsin who frequently ate fish. Four of these investigations resulted from concerns about health problems or treatment for mercury poisoning; individuals complained of symptoms such as mental confusion, balance problems, difficulty sleeping, depression, irritability, and vision impairment. All of the cases were anecdotal in that the researchers made no systematic attempt to seek out these cases. They all presented themselves, to some extent. The point is that clearly the mercury levels in Wisconsin fish are high enough to cause mercury poisoning in adults at fish consumption levels that are not uncommon in the state.

#### IV. AGENCY AUTHORITY TO ADOPT REQUESTED RULES

The Department's authority to adopt the requested rules is clear given that this petition is requesting a revision of existing rules, rules that the DNR is likely compelled to revise in any event as part of a State Implementation Plan under CAMR, as well as under NR 446.029.

The authority for the initial rule making process that resulted in NR 446 as it reads today is provided under 285.11(9) Wis. Stats., which instructs the Department to "Prepare and adopt minimum standards for the emission of mercury compounds or metallic mercury into the air."

Section NR 446.029, "Adoption of federal mercury standard," of Subchapter II – Control of the Atmospheric Deposition of Mercury, should be deleted from Chapter NR 446 in any event. This petition requests that the Department revise the rules in a direction not anticipated by NR 446.029, due to the circumstances described in this petition that were not anticipated when NR 446 was promulgated almost two years ago. However, regardless of the outcome of the rule revision, NR 446.029 compels a revision that will have been completed by a date that will have been past, and therefore, becomes moot and obsolete once the revision is complete; again, regardless of its content. Therefore, Section NR 446.029 should be deleted in this revision, as it will have no meaning or purpose after these rule revisions.

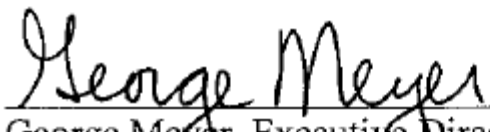
The DNR has clear, unquestionable statutory authority to adopt the requested rules. For the reasons set forth above, Petitioners urge that the Department to promulgate the requested rules with all due expedience.

Date this 22<sup>nd</sup> of January 22, 2007.

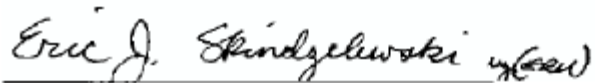
Respectfully submitted:



Keith Reopelle, Program Director  
Clean Wisconsin



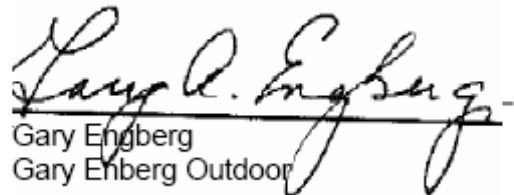
George Meyer, Executive Director  
Wisconsin Wildlife Federation



Eric Skindzelewski, President  
Lakeshore Fisherman Sports Club



Gerald Ernst, President  
Wisconsin Division of the Izaak Walton League



Gary Engberg  
Gary Engberg Outdoor



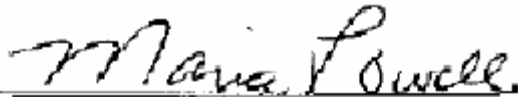
Ted Lind, President  
Wisconsin Council of Sport Fishing Organizations (WCSFO)



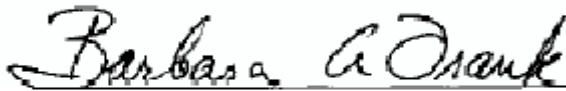
Eric Uram, Board Member  
Yahara Fishing Club



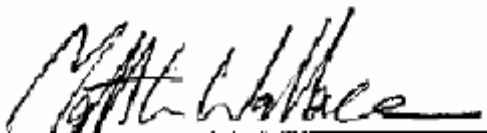
Russ Ruland, President  
Muskellunge Club of Wisconsin



Maria Powell, Executive Director  
Madison Environmental Justice Organization



Barb Frank  
John Muir Chapter of the Sierra Club



Matt Wallace, Environmental Associate  
Wisconsin Public Interest Research Group

