# Report From Agency

REPORT TO LEGISLATURE

NR 439, 446 and 484, Wis. Adm. Code
Control of mercury emissions from electrical generating units

Board Order No. AM-32-05
Clearinghouse Rule No. 07-036

Basis and Purpose of the Proposed Rule

Since the development of the current mercury rule which took effect on October 1, 2004, mercury control technology has advanced, commercial application of mercury control technology has commenced and federal regulations for coal-fired power plants are still not established. Subsequent to Wisconsin's mercury rule, other states developed regulations that require more mercury emission reductions than our requirements.

In a 2007 citizen petition to the Natural Resources Board, revisions to the current state mercury rule were requested that achieve a 90% mercury reduction and make our rule consistent with requirements in effect or under development in our neighboring states, Illinois, Michigan and Minnesota. These proposed revisions update requirements to reflect developments that have occurred since the current state mercury rule was established.

Under the proposed revisions, the state's large coal-fired electric generating units, those with a nameplate capacity of 150 Megawatts (MW) and greater, must achieve a 90% mercury emission reduction through one of two compliance paths. Small coal-fired electric generating units, those with a nameplate capacity greater than 25 MW but less than 150 MW, must reduce their mercury emissions to a level defined as Best Available Control Technology (BACT).

*2010 Major Utility 40% Mercury Reduction*

Under existing provisions of ch. NR 446, the state's major electric utilities including Dairyland Power Cooperative, We Energies, Wisconsin Power & Light, and Wisconsin Public Service Corporation, must reduce mercury emissions 40% by 2010 from a baseline established in 2007. This reduction requirement is retained in the proposed revisions. This requirement affects 36 electrical generating units operated by these major electric utilities.

The requirements in the proposed revisions will affect additional electric generating units and four additional state electric utilities including Madison Gas & Electric Company, Manitowoc Public Utilities, Mid-American Energy Company and Northern States Power Wisconsin would be affected.

*Large Electric Generating Units*

By January 1, 2015 existing large electric generating units must achieve a 90% mercury reduction or limit the concentration of mercury emissions to 0.0080 pounds of mercury per gigawatt-hour. Compliance must be demonstrated annually on a unit-by-unit basis. However, large units under common ownership or control can average to meet the mercury emission standard.

*Large Electric Generating Unit Multipollutant Alternative*

A multipollutant alternative for large electric generating units allows for a delay in attaining the 90% mercury emission reduction standard if the large electric generating unit reduces nitrogen oxides and

sulfur dioxide emissions beyond those currently required by federal and state regulations. Owners and operators must designate which large units will follow the multipollutant option by December 31, 2010.

An additional six years to achieve a 90% mercury emission reduction standard is provided to large electric generating units choosing the multipollutant reduction approach. In order to receive the delayed attainment for mercury reductions, affected electric generating units must achieve a nitrogen oxides ($NO_x$) emission limit of 0.07 pounds of $NO_x$ per million BTU and a sulfur dioxide ($SO_2$) emission limit of 0.10 pounds of $SO_2$ per million BTU by January 1, 2015. Compliance must be demonstrated annually on a unit-by-unit basis. However, large units under common ownership or control can average to meet the $NO_x$, $SO_2$, or mercury emission limit.

An interim mercury reduction goal is established to achieve a 70% mercury emission reduction or limiting the concentration of mercury emissions to 0.0190 pounds of mercury per gigawatt-hour by January 1, 2015. Beginning January 1, 2018, an 80% mercury reduction or limiting the concentration of mercury emissions to 0.0130 pounds of mercury per gigawatt-hour must be achieved. By January 1, 2021 a 90% mercury reduction or limiting the concentration of mercury emissions to 0.0080 pounds of mercury per gigawatt-hour is required. The percent reduction standard is measured from the mercury content in the coal combusted.

If no large electric generating units elected the multipollutant option, by 2015, total mercury emissions would be approximately 536 pounds per year. If all large electric generating units elected to follow the multipollutant option, mercury emissions would still be reduced to 536 pounds however, not until 2021. Substantial reductions in sulfur dioxide and nitrogen oxide emissions would, however, be achieved by 2015 under the multipollutant option. These reductions of pollutants other than mercury have significant health and welfare benefits to Wisconsin and address other critical air quality concerns including fine particles, haze, and ground level ozone.

*Early Mercury Emission Reduction Credits*

A large coal-fired electric generating unit may request certification of early mercury emission reductions. These early emission reduction credits may be used to meet only a portion of the annual allowable mercury emissions for the 70%, 80% and 90% emission limitations in the multipollutant compliance pathway.

Early emissions that qualify are:

1. Reductions beyond 40% of the baseline requirement in 2010-2014 for major electric utilities; and
2. Electric generating units that select the alternative multipollutant compliance pathway that achieve reductions beyond the 70% reduction requirement in the years 2015 to 2017 and the 80% reduction requirement in the years 2018 to 2020.

*Small Electric Generating Units*

By January 1, 2015, small coal-fired electric generating units must achieve a level of mercury emissions determined by the Department to be BACT. BACT includes economic and environmental considerations. Owners or operators would propose BACT for small units by June 30, 2011 and the Department must respond within six months of a complete proposal. Owners or operators also have the option to include small units in the large unit mercury or alternative multipollutant compliance pathway.

*New Electric Generating Units*

After the effective date of the rule, new or modified coal-fired electric generating units must meet the requirements in section 112 of the Clean Air Act. However, in no case shall the permitted mercury reduction for these units be less than 90% removal of mercury from coal combusted.

*Compliance Flexibility*

Owners and operators are provided several options to achieve compliance with the mercury and alternative multipollutant emission limitations proposed. Below are the compliance flexibilities that have been included in the proposed revisions:

1. Instead of demonstrating compliance on a unit-by-unit basis, emission averaging among all large electric generating units under an owner or operator's control is allowed. Under this compliance approach the overall reduction requirements are still achieved; however, some units would reduce more than the emission limitation required while some units would reduce less. Emission averaging is limited to those units within a compliance pathway, either the mercury only or multipollutant alternative.
2. Large electric generating units can either demonstrate compliance with the mercury removal efficiency requirement (70%, 80% or 90%) or opt to meet an equivalent mercury stack emission concentration in pounds per gigawatt hour (e.g. 0.0080 lbs/gigawatt-hour for 90%). The alternative allows compliance to be demonstrated without an ongoing fuel sampling and analysis program, an approach that favors the use of mercury continuous emission monitors. Mercury continuous emission monitors are the Department's preferred compliance determination method.
3. For small electric generating units, owners and operators can choose to have these units follow a large electric generating unit compliance pathway in lieu of installing Best Available Control Technology.
4. A compliance extension, not to exceed two years from 2015, for large electric generating units to meet the mercury only or the multipollutant alternative may be granted if a demonstration that electric reliability could be disrupted is provided. The Department would consult with the Public Service Commission on any electric reliability compliance extension request.
5. Approved early mercury emission reduction credits can be used to meet a margin of the allowable mercury emission limitations for electric generating units in the multipollutant compliance pathway.

*Evaluation Reports*

Two evaluation reports for the Board would be required. By August 31, 2013 staff will provide a report on the achievability of mercury reduction requirements in the proposal based on a review of control technology developments and include recommendations for revisions or other actions that may be appropriate based on the evaluation. A second report is triggered by either the proposal of a federal regulation or enactment of federal law that includes mercury reduction requirements for coal-fired electric generating units. This is a comparative evaluation that may include recommendations for revisions or other actions staff deem appropriate.

Summary of Public Comments

A summary of public comments on the March 2007 proposed revisions to Chapter NR 446 are included in *Attachment A - Public Comment Summary - March 2007 Proposed Revisions to Chapter NR 446, Control of Mercury Emissions*. Five public hearings were held in May 2007 and numerous comments were received.

A public hearing was held on the March 2008 proposed revision in Madison on April 7, 2008. Written comments were accepted until May 5, 2008. There were eleven hearing appearances. The majority of those who commented at the public hearing urged the Department to require mercury emission reductions sooner. Several stakeholder meetings occurred after the end of the public comment period for the purpose of clarifying concerns and understanding recommended changes to the proposed revisions.

Modifications Made

The March 2008 proposed revisions were modified to address public comments. A summary of public comments received and staff response to those comments is included in *Attachment B - Response to*

*Public Comment - March 2008 Proposed Revisions to Chapter NR 446, Control of Mercury Emissions*. Attachment B provides rationale for the revisions made to the March 2008 proposal. Below is a summary of the changes made:

- A definition for Best Available Control Technology (BACT) has been added.
- A note has been added identifying the individual electric generating units required to establish a mercury baseline under the current state mercury rule. These are the units affected by the 2010 mercury emission limitation for major utilities requiring a 40% reduction from this mercury baseline.
- Lowest Achievable Emission Rate will not be required for new coal-fired electrical generating units. Instead the provisions of section 112 of the Clean Air Act for new and modified sources will determine mercury emission limitations for new units with the exception that in no case shall the emission limitation for a new or modified unit require less than a 90% mercury emission reduction.
- The procedure for certifying early emission reduction credits has been simplified.
- The electric reliability compliance extension has been expanded to allow electric generating units following either the mercury only compliance path or the alternative multipollutant compliance path an opportunity to seek additional time to meet mercury, sulfur dioxide or nitrogen oxides emission limitations.
- Owners or operators are required to designate the compliance approach for large electric generating units, either the mercury only or multipollutant alternative. This election of the compliance approach must be made by December 31, 2010. A preliminary BACT determination for small electric generating units is required from owners and operators by June 30, 2011. In the public hearing proposal these requirements were due 24 months and 30 months, respectively, after the effective date of the revisions.
- The report evaluating the achievability of mercury reduction requirements under the multipollutant option has been expanded to include an evaluation of all proposed mercury reduction requirements from 2015 through 2021.
- A second evaluation report has be added. In this report, Department staff will report to the Board within 6 months of enactment of a federal law or promulgation of a federal regulation that contains mercury reduction requirements for sources affected by the proposed revisions. This report must provide a comparison of requirements and may include recommendations to the Board for rule revisions or other actions.
- The use of early mercury emission reduction credits is increased from 5% to 10% of annual allowable emissions.
- A variance from requirements due to technological and economic infeasibility for existing units has been added.
- Under the multipollutant compliance option for large electric generating units the $SO_2$ emission limitation is 0.10 lbs/mmBtu. A provision has been added that also allows compliance with this limitation can be achieved by demonstrating a 90% control efficiency of $SO_2$ emissions.
- The rule requires periodic control efficiency testing for demonstrating compliance with the 2010 to 2014 mercury reduction requirements. Additional EPA approved stack testing methods have been added as acceptable testing methods to meet this requirement.
- A methodology has been added that allows electric generating units vented to a common stack to demonstrate compliance that are affected by different emission limitations for the same air pollutant.
- An alternative to the requirement to measure fuel mercury content on a year-to-year basis has been added. This alternative allows the establishment of a fixed baseline for a 5-year period.

<u>Appearances at the Public Hearing</u>

May 15, 2007 – Green Bay

Charles Paine, N8172 Firelane 13, Menasha, WI 54952
Chuck Matyska, Wisconsin Wildlife Federation, 5055 County Highway V, Cecil, WI 54111

In opposition:

David M. Nelson, 425 Scott Drive, Green Bay, WI 54303
Scott Manley, Wisconsin Manufacturers & Commerce, 501 E. Washington Ave., Madison, WI 53703
Jessica Garrels, 118 S. Washington, 318B, Green Bay, WI 54301
Carolyn Paine, N8172 Firelane 13, Menasha, WI 54952
Richard Krueger, 9898 County Road Z, Pound, WI 54161
Ronald Vercanteren, 4277 Rosehaven Court, Green Bay, WI 54313
Andrew DeBaker, 881 Dousman Street, Green Bay, WI 54303
Diana Lawrence, [no street address given], Appleton, WI 54911
Clifford Graveen, 1261 Kenwood Street, Green Bay, WI 54304
Will Stahl, 216 Stevens Street, Neenah, WI 54956
Jack Heyer, 3904 Silver Bow Drive, Green Bay, WI 54313
Connie Lawniczak, Wisconsin Public Service, 3119 Lineville Road, Green Bay, WI 54313

As interest may appear:

Bill Skewes, Exec. Dir., Wis. Utilities Assn., 44 E. Mifflin St., #202, Madison, WI 53703
Rebecca Katers, Clean Water Action Council of N.E. Wis., 2484 Manitowoc Road, Green Bay, WI 54311
Randy Oswald, P.O. Box 19002, Green Bay, WI 54307
Raj Rau, P.O. Box 19002, Green Bay, WI 54307
Steve Biebel, P.O. Box 19002, Green Bay, WI 54307
Mitch Lagerstrom, WPS Environmental Consultant, 700 N. Adams Street, Green Bay, WI 54307

May 17, 2007 – Stevens Point

In support:

Matt Guidry, 116 Water Street, Evansville, WI 53536

In opposition:

Bob Seitz, Wis. Utility Investor, Inc., 10 E. Doty Street, #500, Madison, WI 53707
Jerry Knuth, 911 4th Street, Plover, WI 54467
Scott Manley, WMC, 501 E. Washington Ave., Madison, WI 53703
Nancy Turyk, 6813 Madley Road, Amherst, WI 54406

As interest may appear:

George Rogers, 1032 Ridge Road, Stevens Point, WI
Sharon Schwab, 8221 100th Street S, Wisconsin Rapids, WI 54494
Justin Barrick, 1457 CTH J, Hatley, WI 54440

May 22, 2007 – Eau Claire

In support:

George Meyer, Wisconsin Wildlife Federation, 201 Randolph Drive, Madison, WI 53717
Eric Uram, Sierra Club, 4317 Wakefield Street, Madison, WI 53711
Brody Granberg, 2426 Ridge Road, Eau Claire, WI 54701
Angi Hoffner, 743 1st Street East, Altoona, WI 54720
Chad McCracken, 743 1st Street East, Altoona, WI 54720
Karen Hartnett, 330 Gilbert Avenue, Eau Claire, WI 54701
Douglas Burrows, Wisconsin Wildlife Federation, 132 Viking Place, Eau Claire, WI 54701
Carla T. Klein, 222 S. Hamilton, Madison, WI 53703
Jim Olson, 550 [street name illegible], #304, Eau Claire, WI 54706
Rick Magyar, 18753 67th Avenue, Chippewa Falls, WI 54729
Douglas Reace, 615 Summer Street, Eau Claire, WI 54701

James A. Dickerson, 5411 E. Hamilton Avenue, Eau Claire, WI 54701
Sean Hartnett, 330 Gilbert Avenue, Eau Claire, WI 54701

In opposition:

Charles Warner, 1003 S. Hillcrest Parkway, Altoona, WI 54720
Chris Ignatowski, 912 North View Drive, Mosinee, WI 54455
Tina Ball, Xcel Energy, 1414 W. Hamilton Ave., P.O. Box 8, Eau Claire, WI 54702
Bob Fassbender, WMC, Madison, WI 53703
Bob Seitz, Wis. Utility Investors, 10 E. Doty Street, Madison, WI 53703
Paul V. Hoff, 2519 Keith Street, Eau Claire, WI 54701

As interest may appear:

Robin Jones, 339 W. Dell, New Auburn, WI 54757
Denise Waterhouse, 860 County Highway M, New Auburn, WI 54757
Linda McCracken, 744 2nd Street East, Altoona, WI 54720
Roxanne Trowbridge, 9436 County Highway M, New Auburn, WI 54757
Jennifer Giegerich, 306 E. Wilson Street, Madison, WI 53703
Meg Marshall, 3013 Putnam Glen Place, Eau Claire, WI 54701
James Dunning, 164 Wold Court, Eau Claire, WI 54701

May 23, 2007 – Madison

In support:

Lisa Conley, 516 Lac La Belle Drive, Oconomowoc, WI 53066
Caryl Terrell, League of Women Voters of Wisconsin, 19 Red Maple Trail, Madison, WI 53717
Don Hammes, Wisconsin Wildlife Federation, 3507 Valley Ridge Road, Middleton, WI 53562
Jeffrey Schmipff, 2721 Kendall Avenue, Madison, WI 53705

In opposition:

Don Ferber, 4700 Allis Avenue, Madison, WI 53716
Bill McClenahan, 7 N. Pinckney Street, Suite 300, Madison, WI 53703
Eric Uram, Yahara Fishing Club, 4317 Wakefield Street, Madison, WI 53711
Jeff Knaus, 2204 Sullivan Avenue, Kaukauna, WI 54130
Eileen Bruskewitz, 5134 Reynolds Avenue, Waunakee, WI 53597
Gary Ruhl, 2828 N. Ballard Road, Appleton, WI 54911
Phil Uekert, 2321 Stuart Court, Madison, WI 53704
David Hoopman, 131 W. Wilson Street, Madison, WI 53703
Ron Antonneau, Wis. Public Service Corp., P.O. Box 19002, Green Bay, WI 54307

As interest may appear:

Keith Reopelle, 122 State Street, #200, Madison, WI
Jennifer Feyerherm, Sierra Club, 122 W. Washington Ave., Suite 830, Madison, WI 53711
Michael Ricciardi, Madison Gas and Electric, P.O. Box 1231 Madison, WI 53701
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Annie Staten, 336 N. Allen Street, Madison, WI 53726
Steve Books, 211 S. 2nd Street, Mount Horeb, WI 53572
Roger Cole, E12805 West Point Drive, Merrimac, WI 53561
David Bender, Sierra Club, 634 W. Main Street, Suite 101, Madison, WI 53703
Colin Robertson, 921 Lake Court, Madison, WI 53715
Jeanne Burns-Frank, 133 S. Blair, P.O. Box 1231, Madison, WI 53701
Angela James, Madison Gas & Electric Company, 133 S. Blair Street, Madison, WI 53701

Robert LeRoy Steinke, 5753 Shady Drive, Plover, WI 54467
Jennifer S. Persha, 3041 Maple Valley Drive, #101, Madison, WI 53719
Judy Skog, 626 Orchard Drive, Madison, WI 53711

May 24, 2007 – Milwaukee

In support:

Bill Breihan, United Steelworkers, District 2, 3062 N. Cambridge Avenue, Milwaukee, WI 53211
Michael Carvan, 3936 N. 78th Street, Milwaukee, WI 53222
Karl Bucholz, 4478 N. Cramer Street, Shorewood, WI 53211
Claire Vanderslice, 2276 Highway I, Grafton, WI 53024
Elizabeth Bruch, 407 E. Lakeview Avenue, Whitefish Bay, WI 53217
Ted Lind, Wis. Council of Sport Fishing, 4434 N. 52nd Street, Milwaukee, WI 53218

In opposition:

Bob Seitz, Wis. Utility Investors, 10 E. Doty Street, #500, Madison, WI
Eric Skindzelewski, Lakeshore Fisherman Sports Club, 4640 S. Howell Ave., Milwaukee, WI 53207
Todd Stuart, Wis. Industrial Energy Group, 10 E. Doty Street, Suite 800, Madison, WI 53703
Scott Manley, Wisconsin Manufacturers & Commerce, 501 E. Washington Avenue, Madison, WI 53703

As interest may appear:

Cheri Briscoe, 2016 E. Windsor Place, Milwaukee, WI 53202
Steve Baas [no address given]
Christine Zapf, 4240 S. Sunny Slope Road, New Berlin, WI 53151
Jennifer Feyerherm, 122 W. Washington Avenue, Madison, WI
Rosemary Wehnes, 7922 Jackson Park Blvd., Wauwatosa, WI 53213
Louise Petering, League of Women Voters of Milwaukee, 7229 N. Santa Monica Blvd., Milwaukee, WI 53217
Bru Moore, 4260 S. Victoria Circle, New Berlin, WI 53151
David F. Seitz, RMT, Inc., 150 N. Patrick Blvd., Suite 180, Brookfield, WI 53045
Chris Henecker, 2024 E. Newten Avenue, Shorewood, WI 53211
Rose Stietz, P.O. Box 12150 Milwaukee, WI 53212

April 7, 2008 – Madison

In support – none

In opposition:

Jamie Sarl, Midwest Environmental Advocates, 551 W. Main Street, Suite 200, Madison, WI 53703
Scott Manley, Wisconsin Manufacturers & Commerce, 501 E. Washington Ave., Madison, WI 53703
Caryl Terrell, 19 Red Maple Trail, Madison, WI 53717
Jennifer Feyerherm, Sierra Club, 122 W. Washington Ave., Suite 803, Madison, WI 53703
Shahla Werner, 222 S. Hamilton Street, Madison, WI 53703
Brian Mitchell, Wis. Cast Metals Assn., 405 E. Forest Street, Oconomowoc, WI 53066
Eric R. Uram, 4317 Wakefield Street, Madison, WI 53711

As interest may appear:

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Dan Kohler, Wisconsin Environment, 122 State Street, Suite 310, Madison, WI 53703
Keith Reopelle, Clean Wisconsin, 122 State Street, Madison, WI
Mark Kresowik, Sierra Club, 3839 Merle Hay Road, Suite 282, Des Moines, WI 50310

Michele Pluta, Alliant Energy, 4902 N. Biltmore, Madison, WI 53707
Jay Ehrfurth, 101 E. Wilson Street, Madison, WI 53703
Robert Fassbender, 10 E. Doty Street, Madison, WI 53703

Changes to Rule Analysis and Fiscal Estimate

The rule has changed from a federal-based rule to a state-based rule. These changes in addition to modifications made as a result of public hearings are reflected in both the rule analysis and the fiscal estimate.

Response to Legislative Council Rules Clearinghouse Report

The rule has been extensively redrafted because it no longer reflects the federal drafting standards. To extent possible, the Rules Clearinghouse comments that are still applicable have been incorporated. A majority of the comments were based on the federal drafting style.

Final Regulatory Flexibility Analysis

The requirements in the proposed revisions do not impose regulatory requirements on small businesses in Wisconsin. The electric generating units subject to the emission reduction requirements are not small businesses. However, any costs which the electric utility industry incurs to meet the requirements will likely be passed on to their customers, which will include small businesses.

The cost of the requirements proposed have been estimated by evaluating the type of control equipment installations that may be needed at individual electric generating units. The average cost across all of the affected electric generating units is expected to range from 0.06 to 0.14 cents per kilowatt hour. The costs of sorbent injection for small electric generating units and the mercury portion of multipollutant control costs for large electric generating units will be at the lower end of this range. Multipollutant approaches are preferred because environmental and public health benefits can be achieved at lower costs. The mercury portion of multipollutant control costs could be as low as 0.04 to 0.1 cents per kilowatt hour, while achieving mercury removal efficiencies in the range of 80% to 95%. For an average household, using 8,900 kilowatt hours per year, this range of electricity costs is $5 to $12 annually.

**Attachment A**
**March 2007 Proposed Revisions to Chapter NR 446, Control of Mercury Emissions**
**Public Comment Summary**

## Background

In May 2007, public hearings were held concerning proposed revisions to Chapter NR 446, Control of Mercury Emissions, Wis. Adm. Code. These revisions were prepared in response to the promulgation of the federal Clean Air Mercury Rule (CAMR) in May 2005, a directive from Governor Doyle in August 2006 to achieve greater reductions than the federal CAMR, and a January 2007 Citizen Petition to the Natural Resources Board requesting revisions that would achieve greater reductions sooner than the federal CAMR.

Hearings were held at five locations in May 2007. There were a total of 65 appearances at these hearings and numerous written comments were received by the comment deadline of June 11, 2007.

Below is a summary of the March 2007 proposed revisions and summary of significant comments received during the comment period.

## Key Elements of the March 2007 Proposed Revisions

The 2007 revisions included the federal CAMR mercury reduction levels, compliance schedule and monitoring, reporting and recordkeeping requirements however, they declined participation in the national mercury trading program developed and offered as an option to meet mercury reduction levels by the United States Environmental Protection Agency (EPA). Under these revisions, each electric utility with affected coal-fired electrical generating units was required to meet an annual mercury emission cap. In addition, a commitment to adopt rules by June 30, 2010 to achieve a 90% mercury reduction at every coal-fired electric generating unit by January 1, 2020 was proposed.

In addition to the proposed revisions, public comment was requested on three alternative approaches to reduce mercury from coal-fired power plants including:

- 90 to 95% mercury reduction at every coal-fired electric generating unit by January 1, 2012 without participating in EPA's national trading program.
- Allowing participation in EPA's national trading program to achieve the federal CAMR requirements.
- Participation in EPA's national trading program until January 1, 2015.

## Comment Summary

Electric utilities expressed a preference for participation in EPA's national mercury trading program to meet CAMR requirements. They advised that Wisconsin adopt EPA's model rule for states, unaltered, without inclusion of any options EPA allowed states to consider such as the methodology for determining mercury allocations that established mercury emission caps for each affected electric generating unit. They also felt strongly that a public health and welfare finding pursuant to s. 285.27(2)(b), Wis. Stats., was required prior to adoption of the commitment to develop rules to achieve a 90% mercury emission reduction.

On February 8, 2008, the Washington D.C. Court of Appeals unanimously vacated the federal CAMR. The June 2008 proposed revisions to Chapter NR 446 reflect the vacatur by the federal court.

Industry stakeholders had a similar interest in allowing participation in the national mercury trading program and rules that did not deviate at all from federal CAMR model rule. Similar to the electric utility stakeholders, they felt the Department needed to make the required finding before the proposed revisions could be adopted.

Environmental organizations also encouraged the Department to proceed to make the public health and welfare finding. They requested revisions that would achieve 90 to 95% mercury reduction at each coal-fired electrical generating unit in the state by 2012.

**Comment Follow-up**

After the Natural Resources Board special briefing on mercury in July 2007, staff proceeded to evaluate public comments and develop responses to the concerns with the March 2007 proposed revisions. Staff commenced to prepare the mercury public health and welfare finding as required in Wisconsin Statutes in light of the concern from all interested parties that this was a necessary action. This finding requires written documentation in four specific areas:

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

Several of the significant issues raised in comments on the March 2007 proposed revisions are addressed in the written documentation in the Department's March 2008 Preliminary Public Health and Welfare Finding and June 2008 Addendum prepared . This includes mercury control technology performance, mercury control technology cost and the origin of mercury depositing into the state's lakes and waterways.

**Attachment B**
**March 2008 Proposed Revisions to Chapter NR 446, Control of Mercury Emissions**
**Response to Public Comment -**

Under the proposed revisions to Chapter NR 446, the state's large coal-fired electric generating units, those with a nameplate capacity of 150 Megawatts (MW) and greater, must achieve a 90% mercury emission reduction through one of two compliance paths. Small coal-fired electric generating units, those with a nameplate capacity greater than 25 MW but less than 150 MW, must reduce their mercury emissions to a level defined on a case-by-case basis as Best Available Control Technology (BACT).

A public hearing was held on April 7, 2008 to receive comments on the proposed revisions and a preliminary public health and welfare finding was prepared pursuant to s. 285.27(2)(b), Wis. Stats., that supports the proposed rule revisions. The comment period ended May 5, 2008. All comments were reviewed. Included in this attachment is a summary of significant comments and the staff response.

## A. Rulemaking Process and Procedures

Issue

The Department failed to publish a proper scope statement for the 2008 proposed revisions to Chapter NR 446 and therefore prevented the public from requesting an economic impact report.

Select Comment

*Dairyland Power Cooperative. When WDNR failed to publish a proper scope statement for the 2008 Proposed Order AM-32-05, as required by Wis. Stats. § 227.135(1), Wisconsin citizens and the regulated sources, including DPC, were denied the requisite knowledge and notice needed to effectively evaluate their right to request an economic impact report as permitted under Wis. Stats. § 227.137(2). An economic impact report would have provided critical information necessary for the public, regulators, and the regulated community to better understand and comment upon the full impact of the potential options under consideration.*

Response

This issue is presently before the Dane County Circuit Court. The Department's position is that it has followed the proper rulemaking procedure for the proposed revisions. Additionally, information that would be in an economic impact report has been presented in the Preliminary Public Health and Welfare Finding prepared pursuant to s. 285.27(2)(b), Wis. Stat.

Issue

The state only mercury rule should not be included in the State Implementation Plan (SIP).

Select Comment

*Wisconsin Paper Council. Finally, the notice of public hearings for the proposed rule states that the State Implementation Plan (SIP) is being revised. The department is proposing a state-only mercury rule and it should not be included in the SIP.*

Response

The Department will not request that these revisions to the state mercury rule, as a whole, be included in our federally approved state implementation plan. The public notice included reference to revisions to the state implementation plan to ensure that reductions achieved under certain provisions of the rule can be considered in future state implementation plans. For instance, the multipollutant compliance option has nitrogen oxide ($NO_x$) and sulfur dioxide ($SO_2$) emission reductions associated with it. Since the

Department followed EPA's public notice requirements, full credit for these reductions can be included in any future plan EPA may require.

Issue

The proposed $NO_x$ and $SO_2$ requirements are more restrictive than any corresponding federal standard or program and inconsistent with Wisconsin law.

Select Comment

*Wisconsin Manufacturers and Commerce. WMC is discouraged that DNR is attempting to circumvent statutory requirements and longstanding policies pertaining to Wisconsin's implementation of federal air quality standards. WMC certainly shares DNR's apparent concern that certain areas in Southeastern Wisconsin may be designated nonattainment under the new ozone standard. But as noted above, it is premature to speculate when and where these new requirements will be imposed, much less what will be required to meet the new standard. In any event, Wisconsin statutes govern DNR's response to current and pending standards. ... the proposed NOx and $SO_2$ requirements are more restrictive than any corresponding federal standard or program, making them inconsistent with Wisconsin law.*

Response

The current state mercury rule includes a multipollutant alternative that allows flexibility in achieving mercury reduction requirements in exchange for a commitment to reduce carbon dioxide ($CO_2$), $NO_x$ or $SO_2$ emissions beyond applicable requirements. The proposed revisions include a similar multipollutant compliance option, whereby a large electric generating unit may choose to defer achieving a 90% mercury reduction for an additional six years if it makes $NO_x$ and $SO_2$ reductions beyond current emission reduction requirements for both of these air contaminants. The multipollutant alternative is an option that provides flexibility in achieving mercury reduction requirements and a continuation of an approach established in the existing state mercury rule. The Department's position is that statutory requirements are not being circumvented by including an alternative compliance approach.

**B. Mercury Deposition**

Issue

The Department's preliminary public health and welfare finding failed to demonstrate that a control standard to reduce mercury from coal-fired electric generating units will reduce mercury deposition in Wisconsin.

Select Comments

*Wisconsin Utilities Association and Dairyland Power Cooperative. The Finding does not provide any documented connection between Wisconsin utility mercury emissions and mercury deposition in Wisconsin.*

*Wisconsin Public Service Corporation. The finding does not provide proof that a 90% mercury reduction requirement for Wisconsin utilities will result in a reduction of mercury deposition in Wisconsin.*

Response

Additional analyses were performed and included in the Department's addendum to its preliminary finding addressing this issue. In summary, the preliminary finding and the additional analyses support the Department's conclusion in the preliminary finding that a control standard for mercury reduces mercury deposition from coal-fired electric generating units in the state. The comments on this issue relate to an opinion that a mercury modeling study is required to demonstrate whether a mercury control standard will reduce mercury deposition. For some air pollutants, models have been developed to the point that they

can be relied upon to provide representative information about the air quality impacts due to stationary source emissions. However, mercury modeling is still under development and cannot be relied upon to provide conclusive deposition information. The Department decided that modeling should not be the only information considered. There are ambient monitoring data and other studies that have been conducted in Wisconsin that indicate that controlling mercury emissions from our coal-fired electric generating units will result in a reduction in mercury deposition in the state.

### C. Protection of Public Health and Welfare

Issue

The Department's preliminary public health and welfare finding lacked an adequate health risk assessment and did not identify all populations that may be at risk.

Select Comments

*Wisconsin Utilities Association and Dairyland Power Cooperative. As required by Wis. Stats. 285.27 (2)(b), the Finding does not substantiate that the standard is needed to provide adequate protection for public health or welfare nor provide an analysis showing that failing to promulgate the proposed emission standard will cause population groups to be subjected to levels of mercury that are above recognized environmental health standards. The Finding does not provide a credible risk analysis nor explain how the proposed rule will reduce health risks to Wisconsin citizens.*

*Forest County Potawatomi Community. Although DNR's findings already support the need for quick and dramatic mercury reductions, we strongly recommend that the DNR amend its findings to include the fact that people who eat above-average amounts of fish, such as Native Americans and members of other specific cultures are at a particular risk from mercury emissions.*

Response

The Department determined that the assessment in our preliminary finding supports the development of a mercury control standard. The preliminary finding and the addendum provide comprehensive written documentation that addresses the statutory requirement to identify sources of mercury emissions and populations potentially at risk; assess whether exposures to mercury are above a level of concern; evaluate options to control risks from mercury emissions exposures; and compare mercury emission standards proposed with those from neighboring states.

Native American populations that consume large amounts of fish are at greater risk than the population as a whole and the addendum to the preliminary finding provides data that indicates that Wisconsin's Native Americans are a population at greater risk.

### D. Costs and Benefits

Issue

The department underestimated the cost of mercury control and did not evaluate the incremental cost and benefit of the proposed revised rule versus the existing state mercury rule.

Select Comments

*Wisconsin Paper Council. It is virtually impossible for the department, affected utilities, or ratepayers to accurately predict costs and benefits. We strongly urge the department to slow down this rulemaking until all parties better understand what the potential costs and benefits of state-only regulation at this stringent level of control are.*

*Wisconsin Paper Council. The issue of what would happen under current law (NR 446) versus the proposed changes(AM-32-05) is key to understanding the potential benefits of the proposed rule changes.*

*Wisconsin Manufacturers and Commerce. A critical part of the cost-effective analysis required by Wis. Stat § 285.27 (2)(b) is assessing costs associated with the incremental reductions required under this rule. Of course, this analysis also requires that some benefits inure to those DNR expects would see lower mercury exposure through fish consummation. As noted, DNR failed to show any such benefit. We acknowledge the difficulty in estimating costs when it is unclear whether the proposed emission limitation can even be met. It is evident, however, that the incremental costs are substantial when attempting to achieve 90 percent reduction. We are also convinced that DNR under estimated the cost. The bottom line is that given the inability to quantify benefits, DNR cannot find this proposed regulatory regime is cost-effective, which is required under Wis. Stat § 285.27 (2)(b).*

*Forest County Potawatomi Community. Although it is difficult to compare economic cost and benefits with the critical health impacts associated with mercury, it is important to note the significant benefits of a clean environment to Wisconsin's growing and important recreational economy. As the largest employer in Forest County, the Tribe is well aware of the importance of clean water and air to the Northwoods' rapidly-growing recreational economy. Likewise, throughout the state, recreational tourism is a critical element in our economy and an important source of jobs.*

Response

*Cost of Mercury Controls*

The fiscal estimate prepared for public hearing included mercury control costs for large electric generating units to meet the 90% mercury control requirement and small electric generating units meeting an average 80% control under BACT. In the fiscal estimate costs ranged from 38 to 91 million dollars annually or 0.06 to 0.14 cents per kWh. The lower cost represented an integrated multipollutant approach for large units to achieve mercury control. The higher range represents achieving the required mercury reductions anticipating that all large and small units will face higher material and equipment costs.

After further review the Department finds the cost estimates for mercury control technologies presented in the fiscal estimate are reasonable and reflect the mercury reductions proposed. The Department relied on cost data developed by the U.S. Department of Energy, EPA and the Electric Power Research Institute for our estimates. These costs are consistent with costs being experienced in actual applications of mercury controls reported by the pollution control industry.

*Incremental Cost Between the Existing Mercury Rule and Proposed Revisions*

The cost to meet the existing rule requirements for achieving 75% mercury reduction was estimated in 2003 to be from 71 to 84 million dollars annually and respectively, from 0.16 to 0.18 cents per kWh. In the fiscal estimate costs for achieving the 90% mercury reductions proposed ranged from 38 to 91 million dollars annually or 0.06 to 0.14 cents per kWh.

Using updated costs we compare the existing requirements to the mercury reduction requirements in the proposed revisions. Based on this comparison, shown in the following table, the proposed revisions reduce annual mercury emissions by approximately 465 pounds at an incremental cost of 0.03 cents per kWh. The proposed revisions achieve significant additional mercury reductions with a proportional increase in cost.

**Cost Comparison of the Current and Proposed Mercury Control Requirements**

| Major Utility | Current Rule-75% | | Proposed Revisons (90%/BACT) | |
|---|---|---|---|---|
| | Emissions | cents/kWh | Emissions | cents/kWh |
| WPL | 275 | 0.16 | 112 | 0.21 |
| DPC | 68 | 0.04 | 31 | 0.05 |
| WE | 357 | 0.10 | 142 | 0.14 |
| WPS | 146 | 0.09 | 86 | 0.09 |
| **Total** | **846** | **0.11** | **371** | **0.14** |

*Multipollutant Option Costs*

The complete costs associated with the proposed revisions were not fully evaluated according to some commenters. In response the following is an evaluation of the costs to meet the NOx and $SO_2$ requirements of the proposed multipollutant option for the state's 16 large electric generating units.

**Estimated Cost for NOx, SO2, and Mercury Controls to Meet the federal CAIR or Proposed Multipollutant Option (cents/kilowatt-hour).**

| Utility | Proposed Chapter NR 446 / CAIR | | Proposed Chapter NR 446 / Multipollutant Option | |
|---|---|---|---|---|
| | Mercury Only (2015) | CAIR and Mercury | Mercury Only (2021) | Multipollutant Option |
| WPL | 0.11 | 0.65 | 0.07 | 0.75 |
| WPS | 0.03 | 0.66 | 0.03 | 0.66 |
| Dairyland | 0.05 | 0.61 | 0.05 | 0.65 |
| We Energies | 0.06 | CD | 0.06 | CD |

These costs considered the likely control approaches that these large electric generating units would employ taking into consideration control equipment already installed and control equipment planned for installation. The cost compare meeting the $NO_x$ and $SO_2$ requirements under the federal CAIR to the costs to achieve the multipollutant option proposed. The costs are shown in the following table. To meet the reductions required in the federal CAIR and the 90% mercury reduction by 2015 proposed, the costs range from 0.61 to 0.65 cents per kWh. The costs to meet the multipollutant option, with more stringent $NO_x$ and $SO_2$ requirements than CAIR, range from 0.65 to 0.75 cents per kWh. Note that the We Energies total costs are not estimated because they are implementing multipollutant controls under a consent decree with EPA.

## E. Evaluation of Options

Issue

The Department's mercury public health and welfare finding failed to consider other viable options including the existing mercury rule and the federal Clean Air Mercury Rule (CAMR).

Select Comment

*Wisconsin Manufacturers and Commerce. As noted above, Wis. Stat. § 285.27(2)(b)3 requires an evaluation of options for managing the risks caused by the hazardous air contaminant considering risks, costs, economic impacts, feasibility, energy, safety, and other relevant factors, and* ***a finding that the chosen compliance alternative reduces risks in the most cost-effective manner practicable****. (Emphasis added) Any reasonable interpretation for using the terms "alternative" and "most" in conjunction with cost effective is that DNR would compare its proposed approach to other viable mercury control options; that is, "alternative" means an examination of multiple options. DNR's health risk assessment, however, does not even attempt to compare the cost-effectiveness of this proposal with*

*known, viable alternatives. The most obvious alternatives not evaluated are the existing DNR mercury rules and the overall emission reduction levels found in CAMR.*

Response

The required public health and welfare finding considered the options available through an evaluation of all stationary source categories of mercury emissions in Wisconsin. Coal-fired electric generating units are without question the most significant source category accounting for over 60% of total stationary source mercury emissions and therefore, appropriate for a mercury control standard to manage risks. In addition, coal-fired electric generating units are the most significant source category not covered by federal requirements and mercury reductions under the current rule have not occurred. In light of the determination in the preliminary finding, we have an opportunity to review the current state requirements for this stationary source category and make adjustments based on control technology advancements and other relevant information that has become available since this rule was adopted in 2003.

It should be noted that the preliminary finding includes a comparison of the requirements in the current rule to those in the proposed revisions. The proposed revisions are also compared in detail to mercury requirements for coal-fired power plants in neighboring states.

The federal CAMR is not a viable option since it has been struck down in federal court. It is also important to note that the federal CAMR was not developed under provisions in the Clean Air Act that focus on public health protection. In light of the preliminary finding, it would not be appropriate for Wisconsin to implement an approach that does focus on public health and welfare.

**F. Mercury Control Technology Performance**

Issue

Mercury control technology is not commercially available or capable of operating at 90% control of mercury for the types of coal-fired electric generating units in Wisconsin.
Select Comment

*Wisconsin Power & Light. WPL's review of mercury technology remains unable to conclude that 90% mercury control will be possible. WPL recommends that mercury reductions requirements be set to provide for a reasonable compliance margin given the uncertainties of control technology performance and to account for non-fuel mercury contribution. WPL will try to achieve 90% mercury reduction, but it believes it is only realistic to propose such limits when there is long-term actual operational experience to support this level of stringency.*

Response

In the preliminary finding the Department identified commercially available mercury control approaches and technology capable of achieving 90% mercury removal for the types of coal-fired electric generating units in Wisconsin. The Department recognizes that additional, potentially more cost-effective controls, will be commercially available in the next five years. In addition, the proposed revisions include the following provisions to provide flexibility in meeting the 90% mercury reduction requirement:

- Achieving a 90% mercury reduction is not required until 2015 to accommodate control equipment installations that may require an electric utility to manage installations at several of their electric generating units.
- The compliance schedule for multipollutant controls focuses first on meeting $NO_x$ and $SO_2$ limitations by 2015 and allows additional time to achieve a 90% mercury reduction . This provides time to evaluate the mercury reductions that the $NO_x$ and $SO_2$ controls are capable of achieving and based on the control performance achieved, determine the most cost-effective approach to meet the 90% mercury reduction requirement.

- Early mercury emission reduction credits can be used to meet a portion of the mercury reduction requirements for electric generating units that follow the multipollutant compliance option.
- Up to a two year compliance extension may be requested to meet the 2015 mercury reduction requirements.
- Emissions averaging between electric generating units provides additional flexibility in meeting emission limitations.
- A variance provision is included to address site-specific issues that may require additional time to comply or may require an alternative emission limitation.

**G. Mercury Ambient Standard**

Issue

The ambient air quality standard for mercury should be repealed.

Select Comment

*Wisconsin Public Service Corporation. WPSC requests that NR 446.03(1) be removed. This rule was originally written to address mercury emissions at chlor-alkali plants. In time since NR 446 was written, Wisconsin's only chlor-alkali plant has agreed to change its process to eliminate the use of mercury. Any new and existing sources of mercury emissions in Wisconsin will be required to comply with the limits found in NR 446. Clearly, WDNR would not issue an operation permit to a source that will cause an ambient mercury concentration of 1 ug/m$^3$.*

Response

The ambient standard for mercury addresses inhalation risk while the purpose of the revisions to the state mercury rule are directed at mercury contamination in the environment that affects public health and welfare from the consumption of mercury contaminated fish. Despite effective mercury regulation and reductions from major stationary sources, there are other sources that emit mercury from their operations. Retention of an ambient mercury standard is useful in evaluating the impact of those other stationary sources.

**H. Consistency with Future Federal Regulations**

Issue

The state mercury rule should have a consistency commitment that would require rule revisions to ensure that federal mercury emission reduction requirements for coal-fired electric generating units are expeditiously adopted. Changes to the way federal Title V air operation permits are revised are also recommended as a way to expedite a transition from state requirements to federal requirements.

Select Comments

*Dairyland Power Cooperative. Any revision of the existing 2004 Chap. NR 446 must retain the current rules requirement that WDNR act promptly to revise and conform the state rule to provisions of a federal rule when a federal rule is promulgated. We urge WDNR to retain NR 446.029 when it finalizes the rule.*

*Wisconsin Power & Light Company. Specifically WPL believes maintaining identical language to that already included in the current rule under NR 446.029 would sufficiently address this transition. The proposed rule at NR 446.19 should also include a requirement to conduct an evaluation of EPA federal mercury regulations when proposed in order to assess compatibility with the Wisconsin mercury rule.*

*We Energies. Under state law, the revised NR 446 will apply until the issuance of a federal MACT standard that regulates electric generating units. We understand that the Department plans to include conditions reflecting the requirements of the revised NR 446 into the Title V operating permits of facilities*

*subject to the rule, once the NR 446 revisions are complete. In order to ensure that the revised NR 446 complies with section 285.27(2)(d), the revised NR 446 should contain two additional conditions clarifying the applicability of Wis. Stat. § 285.27(2)(d). The first is a revision to the applicability provision to state that the rule does not apply to sources subject to an emission limit for mercury under section 111 or 112 of the Clean Air Act. The second change to include in the revised NR 446 is a condition providing that notwithstanding the requirements of Wis. Admin. Code §§ NR 407.14(1)(a-d), any request by a permittee to revise an operating permit to remove the requirements of NR 446 after a federal MACT standard for electric generating units has been issued shall constitute a mandatory revision of the operating permit by the Department. The mandatory revision shall be subject to the administrative processing and issuance requirements of NR 407.11.*

Response

A commitment to provide a comparison report when federal rules are proposed or federal law is enacted is appropriate. A provision has been added under s. NR 446.19 that requires a report to the Natural Resources Board within six months of either action occurring. A consistency commitment to adopt rules or revise operation permits is not needed in the proposed revisions since Wisconsin Statutes are clear about the approach that must be taken by the Department to establish a requirement more stringent than a federal standard affecting stationary sources in the state.

**I. Phase I - 40% Mercury Reduction**

Issue

The requirement for the four major utilities in the state, Dairyland Power Cooperative, We Energies, Wisconsin Public Service Corporation and Wisconsin Power & Light, to reduce mercury emissions 40% by 2010 lacks clarity with respect to the affected units and the compliance determination approach.

Select Comments

*Wisconsin Public Service Corporation. WDNR's intention for Phase I of NR 446 (2010 - 2014) was to allow the 40% mercury emission reductions to be achieved by averaging reductions across all affected combustion units owned (including jointly owned combustion units) by a major utility. However, that is not clearly defined in NR 446.05, NR 446.06, of NR 446.07. Additional language is needed in these sections to clarify the same.*

*We Energies. Again, to clarify rule requirements and make the rule more transparent, we suggest that a list of applicable units be published as part of the rule.*

Response

The 2010 mercury reduction requirement is being retained from the current rule. The baseline mercury emissions from which the 40% reduction is required for each major utility have already been established under existing provisions. Affected owners and operators received written notification of their baseline mercury emissions from the Department in January 2007, as the current rule required. Rule language that includes the procedures required to establish the baseline and the compliance reporting requirements has been retained in this revision. The Department finds that the 2010 reduction requirement applicability and compliance determination method is clear. However, a note has been added under s. NR 446.05 that lists each unit that was included in the baseline determination for the four major utilities affected.

## J. Large and Small EGU Definitions

Issue

The distinction between large electric generating units and small electric generating units as it relates to mercury reduction requirements is questioned.

Select Comments

*Dairyland Power Cooperative. The State of Minnesota Mercury Emission Reduction Act of 2006 defines "qualifying facilities" as those that have a total net capacity of greater that 500 MW from all coal-fired generating units at a facility. The 90% mercury emission reduction requirement only applies to "qualifying facilities". The result is that the State of Minnesota requires only six units out of a total of 27coal-fired units in Minnesota to meet a 90 percent mercury emission reduction standard. With this regulatory program, Minnesota has taken a realistic approach to mercury emissions reduction; an approach that takes into account the nature and age of its electricity generation fleet, fuel type, existing emission controls, and the timing and costs of further reductions.*

*Manitowoc Public Utilities. MPU requests the Department to revise applicability under NR 446.09(1) and the "small coal-fired EGU" definition under NR 446.10(10). The suggested change would re-define a "small coal-fired EGU" to be an electric generating unit with a nameplate capacity greater than 25 MW but less than 150 MW. The suggested definition is consistent with an affected unit under section 112 of the Clean Air Act (CAA).*

*Forest County Potawatomi Community. The Potawatomi strongly oppose the exclusion of electric units of less than 150 MW from the 90% mercury reduction requirement. These units are often the dirtiest power plants in the state, and many are located in the most populated areas of the state.*

Response

Small electric generating units, less than 150 MW, but greater than 25 MW, are required to achieve a level of mercury control defined as Best Available Control Technology (BACT). This control requirement considers cost in determining the level of mercury control that is achieved. Small electric generating units comprise 14% of mercury emissions from electric utilities in Wisconsin. A preliminary analysis of the small units affected by BACT has been conducted and it is anticipated that the average mercury control level is likely to be 80%. Wisconsin's 30 small electric generating units have current mercury emissions of 462 pounds that will be reduced to approximately 97 pounds after application of BACT.

Large electric generating units, 150 MW and larger, are required to meet a mercury control level of 90%. These large units are generally newer and more efficient and therefore, additional investment is appropriate. The 16 large electric generating units account for 86% of electric utility mercury emissions. Current mercury emissions from large electric generating units of 2,745 pounds will be reduced to 439 pounds after meeting the 90% reduction requirement.

Minnesota established their requirements before the federal CAMR was vacated. Thus, their requirements supplemented mercury reductions that would apply to units 25 MW or greater based on the applicability level established in the federal CAMR.

## K. Mercury Emission Limitation for New Units

Issue

The revisions lack clarity in what distinguishes a new unit from an existing unit and the need for a Lowest Achievable Emission Rate (LAER) for new units is questioned.

Select Comments

*Wisconsin Power & Light. The proposed rule is unclear in defining a "new" versus an "existing" unit for purposes of NR 446 compliance. WPL recommends that the rule language clarify that any unit for which a construction permit application was submitted or should have been submitted to the WDNR by the promulgation date of the rule be considered an "existing" unit (similar language is already in NR 446 and would continue to be included in 446.03(2)(c)).*

*Wisconsin Power & Light. WPL believes that the LAER requirement creates additional and unnecessary administrative complexity because mercury compliance requirements are currently in-place for new coal-fired EGUs required by CAA Section 112(g)(2) to obtain permits with mercury standards established on a case-by-case basis. These case-by-case standards must be equivalent to the maximum achievable emission controls achieved by the best controlled similar source. Therefore, WPL recommends that the LAER requirement be removed and instead that the Department require new units to meet the Federal mercury control requirement for new coal-fired EGUs.*

Response

If a complete application for a new or modified unit has been submitted before the promulgation date of the revisions, it will be considered existing. A minimum 90% mercury reduction requirement is required under s. NR 446.11 for new or modified units.

With the federal CAMR vacated, case-by-case MACT determinations are now in effect for new and modified units under section 112 of the Clean Air Act. In light of the applicability of an effective control technology requirement for new and modified units, the LAER requirement has been removed.

**L. Low Mercury Emitting Unit Exemption**

Issue

Exemptions for low mercury emitting electric generating units are desired.

Select Comments

*Dairyland Power Cooperative. The current Wis. Adm. Code Chap. NR 446, September 2004, contains language at NR 446.06(5) exempting units with annual mercury emissions of 25 pounds or less. We urge WDNR to include an exemption for all units greater that 25 MW with annual emissions of 25 pounds or less in the final rule.*

*Manitowoc Public Utilities. MPU would like consideration given to the establishment of a mercury threshold value. The current rule exempts EGUs emitting less than 10 pounds of mercury per year and we would suggest this exemption continue in the new rule.*

*Wisconsin Public Service Corporation. The original version of NR 446 had an additional section in this part [NR 446.06(5)] which contained language exempting units that emit less than 25 pounds of Hg annually. The current version of NR 446 does not have this exemption under the existing rule, and did not collect baseline data during 2002-2004.*

Response

The exemption provision in the current state mercury applies to the sum of mercury emissions from all units greater than 25 MW at a power plant. The exemption was created to match the major utility concept that defined the applicability of requirements in the current rule.

The proposed revisions define applicability differently considering unit size rather than annual emissions as the basis for establishing the threshold for applying mercury reduction requirements. BACT, which

considers costs, defines mercury reduction requirements for small electric generating units. The applicability approach and establishment of BACT, with cost considerations, for small units is adequate to address the request for a low mercury emission exemption.

**M. BACT for Small EGUs**

Issue

Modifications to the application of BACT to small electric generating units have been requested.

Select Comments

*Manitowoc Public Utilities. We would like to see language added that the BACT determination shall not require control that exceeds the requirements applicable to a large coal-fired EGU (90% removal). We would also like consideration given to an option to forego the BACT determination scenario by accepting a default value of 80% removal for example. Another option could be to define presumptive BACT for small coal-fired EGUs as having mercury emissions equal to or less than 10 pounds per year.*

*Northern States Power of Wisconsin. NSPW asks the Department to consider adding language to the rule allowing small EGUs burning only renewable fuels on or before January 1, 2015 to be considered as meeting presumptive BACT for mercury.*

*Madison Gas and Electric Company. Similarly, the proposed rule at NR 446.12 requires small coal-fired electric generating units ("EGU") to control mercury emissions to a level that is determined by the department to be Best Available Control Technology ("BACT"). Small EGUs should be provided the option of switching or blending fuels instead of implementing BACT. Sources that chose this option could switch back to coal only by accepting a permit limitation that restricts mercury emissions from the unit to levels determined to be BACT.*

*We Energies. BACT is referenced in NR 446.03 and in NR 446.12, but it is not defined in NR 446. The BACT review and determination is well understood under the prevention of significant deterioration (PSD) program in NR 405 but not referenced in NR 446. Regulated sources need to understand the process that will be used by the Department for a BACT determination under NR 446. We suggest a definition and process similar to that contained in NR 405.*

Response

The definition of BACT that applies in Chapter NR 445 to hazardous air pollutants will be applied in Chapter NR 446. This definition has been added to Chapter NR 446. The Department has had experience applying BACT to hazardous air pollutants, such as mercury. The proposed revisions give owners and operators the opportunity to provide the Department with an initial BACT recommendation. It is acceptable to comply with BACT through switching to another fuel with minimal mercury emissions, like natural gas.

**N. Large Unit Mercury Emission Limitations and Schedule**

Issue

The optional output based mercury emission limitation is not equitable with either the 70%, 80% or 90% mercury reduction requirement.

Select Comments

*Dairyland Power Cooperative. Our review of the data submitted to WDNR for compliance with the baseline procedures in NR 446.06 and NR 446.07and the data compiled from U.S. EPA's ICR supports an analysis that the proposed output-based emission rate standard of 0.0080 lbs/GWh is far to restrictive.*

*Wisconsin Power & Light. Documentation obtained from WDNR to support the calculation of this output-based limit references that fuel mercury content assumptions were taken from the ICR 1999 database. Under the current NR 446 rule, WPL conducted comprehensive fuel sampling and analysis of mercury content for a one year period (Dec. 2004 to Nov. 2005). Review of WPL's data indicates that the subbituminous mercury content is at least 20% to 30% higher than the values used by the WDNR in the revised rule development. WDNR should re-evaluate this standard given real fuel sampling data that has already been provided to the Department by Wisconsin utilities.*

*We Energies. As proposed the output-based emission limits are more stringent than the percentage-based emission reduction requirements for some units. For We Energies system, the 0.0080 lb/GWh emission rate translates to a 93% requirement. Having an equitable emission rate alternative to the percent reduction requirement as a compliance limit is also very important so that the company can develop consistent monitoring and reporting systems and avoid the additional costs and operational complexity associated with frequent coal sampling and lab analysis. We request that the Department allow for a unit-specific emission rate limit based on the 2004 baseline data submitted according to NR 446.06. This is consistent with using the 2004 data as the baseline for the 2010-2014 emission reduction requirements in the rule.*

Response

The proposed revision have been amended to allow a determination of an alternative output based limit that considers individual unit characteristics and is still consistent with a 70%, 80% or 90% mercury reduction.

Issue

The schedule for mercury emission reductions should be more stringent.

Select Comment

*Midwest Environmental Advocates et al. DNR must not allow any delay, beyond what is reasonably necessary, in implementing its mercury reduction plan, thus ensuring Wisconsin citizens no further unnecessary exposure. Specifically, Wisconsin should require no less stringent a timeline for compliance as being required by Illinois. Illinois, a coal producing state, requires a 90 percent reduction in mercury emissions by July 1, 2009. Minnesota sets the target at December 31, 2010 for dry-scrubbed units and December 31, 2014 for wet-scrubbed units. The utility industry has demonstrated that cost-effective technology is available to reduce emissions by 90 percent. DNR should recognize the need to reduce mercury emissions by 90 percent from all EGUs, and adopt a threshold in line with EPA and the rest of the country. Require all EGUs with nameplate capacity greater than 25 megawatts meet 90 percent mercury reduction requirements.*

Response

The Department reviewed the schedule proposed to achieve the mercury control limitations proposed and found the requirements to be appropriate. Many factors support the schedule, including:

- Compared to the existing mercury rule, the proposed revisions will achieve greater mercury emission reductions by 2015.
- The timing for the proposed requirement considers the types of control equipment needed may require up to 2 to 3 years to install on an individual unit.
- The type of control envisioned is important to maintain fly ash quality and reuse as a cement additive.
- For the multipollutant compliance option, the extended schedule in the proposed revision accommodates the time required for multiple, major equipment installations on an individual unit.
- The schedule must allow utilities to schedule and manage installations over multiple electric generating units while maintaining electric reliability.

Issue

Averaging between new and existing electric generating units should be allowed to meet the mercury emission reductions proposed.

Specific Comment

*Wisconsin Power & Light. In addition to a technology requirement for the control of mercury, the proposed rule requires new coal-fired EGUs to control mercury emissions by at least 90%. WPL requests that the proposed rule include provisions for inclusion of new unit emission reductions into mercury control averaging that has been proposed to be an alternative method of compliance for existing EGUs.*

Response

The Department reviewed the need for averaging between new and existing electric generating units and concluded that it is neither appropriate or necessary.

**N. Multipollutant Option**

Issue

Changes to the multipollutant emission limitations and schedule are needed.

Select Comments

*Dairyland Power Cooperative. For mid-sized units* (200 MW to 499 MW)*, a willingness to consider unit size, age, physical site constraints, fuel type, and unit outage schedules, along with a flexible approach for working out reasonable multipollutant reduction compliance plans for achieving reductions in SO2, NOx and mercury could lead to benefits that accrue to the environment and success for both the regulated community and the Department.*

*Wisconsin Public Service Corporation. The requirement for NOx control beyond CAIR and Regional Haze requirements is unnecessary and excessively burdensome. Electric utilities that choose to be in compliance with the new federal rules instead of purchasing allocations will bear additional costs in order to qualify for the multi-pollutant option in NR 446. This provides negative incentive to participate in the multi-pollutant option, as the cost of compliance with the NOx emission limit may exceed the cost of controlling mercury to 90%. WPSC requests that NR 446 be changed to read as follows:*
*(a) For NOx, beginning January 1, 2015, 0.125 pounds per million BTU heat input.*

*Forest County Potawatomi Community. Likewise the multi-pollutant reductions should occur substantially sooner than required under the Proposed Rule.*

Response

The Department has carefully reviewed the multipollutant requirements and compliance schedule and finds that changes should not be made. To meet the multipollutant option, major control equipment installations would be necessary. To ensure electric reliability it is necessary to stage these major installations. The schedule proposed accommodates this critical need.

Issue

A percent control requirement should be established to demonstrate compliance with a multipollutant $NO_x$ or $SO_2$ requirement in lieu of the proposed emission limitation.

Select Comment

*Wisconsin Power & Light. WPL believes that there is opportunity to increase the compliance flexibility for the multi-emissions alternative under NR 446.14. In addition to having NOx and SO2 limits in terms of lbs/mmBTU of heat input, WPL requests that similar to the mercury limits, there be added the option to comply with a percent reduction level (instead of a rate-based standard).*

Response

The Department has amended the proposed revisions to allow for demonstrating a 90% control efficiency of $SO_2$ emissions in lieu of the emission rate of 0.10 lbs/mmBtu. A control efficiency option to achieve the $NO_x$ limitation of 0.07 lbs/mmBtu is not appropriate because this compliance approach is not equivalent between coal-fired electric generating units.

**O. Emission Limitation Election**

Issue

The deadline for electing the compliance pathway for large and small electric generating units should be eliminated or established 48 or 60 months after the effective date of the rule.

Select Comments

*Dairyland Power Cooperative. DPC believes that that regulated sources should be allowed 60 months from the effective date of the rule to make an emission limitation election. Additionally, the rule should not prohibit the ability to make a revision to an emission limitation election.*

*Wisconsin Power & Light. WPL requests that the proposed rule revision extend the decision timeframe to 48-months or alternately, provide the ability for a utility to request revision of the election at any point as determined necessary.*

Response

A timely declaration is needed to ensure that installation of control devices can be achieved to meet the proposed emission limitations. If rule promulgation is in 2009, declarations must be made by 2011, leaving only four years to meet the 2015 requirements. Waiting until 2013 or later to declare leaves less than two years to take the actions necessary to meet the proposed requirements.

**P. Compliance Extension**

Issue

The ability to request up to a two-year compliance extension for the multipollutant option should also be available for electric generating units meeting the 2015 mercury reduction requirement of 90%. There should not be a deadline for making a compliance extension request.

Select Comment

*Wisconsin Power & Light. WPL strongly recommends that this extension request must also be available for the 90% mercury-only compliance option. In addition, WPL believes that the timeframe during which a utility may request an electric reliability waiver should not be restricted and that an extension request should be allowed at anytime as long as sufficient justification is available.*

Response

The two-year compliance extension opportunity in s. NR 446.16 has been modified to include the 90% mercury reduction requirement in s. NR 446.13 in addition to the multipollutant alternative in s. NR 446.14. The deadline for requesting an extension has not been changed. This extension request acknowledges that there may circumstances where scheduling installation of control equipment to meet the requirements may take additional time. This is related to the selection of the compliance pathway to achieve mercury emission reductions. To address situations that may arise at a later date a variance provision has been added.

**Q. Off Ramps**

Issue

The proposed revisions should include provisions to address a situation where meeting requirements is not feasible.

Select Comment

*Wisconsin Industrial Energy Group. At the very least, the rule needs to keep existing "off-ramps" (see current NR 446.10 and NR 446.11) to discontinue implementation if there is a determination that emissions technology is not "cost effective and technically feasible."*

Response

Advancements in mercury control technology have occurred since the adoption of the current mercury rule. Although there is reason to be more confident in mercury control equipment performance it is still appropriate to allow for a variance from requirements due to potential technological and economic infeasibility for existing units. Therefore, a variance provision has been included in s. NR 446.165.

**R. Excess Emission Reduction Credits**

Issue

The use of early emission reduction credits should not be limited.

Select Comments

*Dairyland Power Cooperative. DPC believes that the limitation that WDNR proposes on the use of early reduction credits is without merit. We urge WDNR to revise this provision in the final rule so that the regulated sources, both small and large EGUs, have the ability to use 100% of banked mercury ERCs for meeting any compliance option – mercury only or the multipollutant option.*

*We Energies. A risk management margin based on the mass of mercury in the coal makes more sense than a margin based on allowable emissions. A risk management margin based on the mass of mercury in the coal would take into account the natural variability of the mercury content in the coal from year to year, changes in coal suppliers over time, force majeure events causing shifts in coal supplies, and the addition or deletion of coal fueled generation to a utility system. A risk management margin based on the mass of mercury in the coal provides for less margin at the 70% reduction level (i.e. 10% of allowable) than at the 90% level (i.e. 30% of allowable). We request that the Department increase the allowable compliance margin to parallel the increased technology risk at higher levels of emission reduction requirements. We also propose redefining the allowable risk management margin as 3-5 % of mercury fuel content.*

*We Energies. To encourage and recognize early emission reductions, we request that the Department streamline the early credit procedure proposed in the draft rule. We suggest a process similar to the NR*

*428 NOx reporting requirements for 1-hour ozone compliance, where utilities submit a standard compliance form that details the utility's compliance requirements, annual performance, and any excess mass emission reductions. This form could be modified to include a means of tracking mercury emission reduction credits generated, plus any credits used to meet annual compliance. The Department would simply review and confirm each utility's compliance submittal.*

Response

The approval process for early emission reduction credits has been streamlined and the amount of early emission reduction credits that can be used to meet an annual mercury emission limitation for electric generating units has been increased from 5% of the annual allowable emissions to 10% for the multipollutant compliance pathway.

**T. Compliance Determination Concerns**

Issue

Compliance with the proposed mercury emission requirements does not account for mercury added as a result of control measures necessary to reduce air pollutants other than mercury.

Select Comment

*In addition, the 90% limits established have not accounted for additional mercury that will be emitted from EGUs from air pollution control additives, such as naturally occurring mercury in lime and limestone that is injected for flue gas desulphurization (FGD) and water used in these FGD devices that consequently becomes re-emitted.*

Response

A methodology has been included that allows a mercury compliance demonstration to account for mercury added from measures required to address other air pollutants.

Issue

The proposed revisions should retain the compliance determination approach established in the current state mercury rule as another option for meeting the 2015 and later mercury reduction requirements.

Select Comments

*We-Energies. Having an equitable emission rate alternative to the percent reduction requirement as a compliance limit is also very important so that the company can develop consistent monitoring and reporting sestets and avoid the additional costs and operational complexity associated with frequent coal sampling and lab analysis. Using mercury CEMS instead of coal sampling and lab analysis has several additional benefits including improving the measurement accuracy, coordinating with emissions control operation and optimization, and streamlining reporting capabilities.*

*Wisconsin Power & Light. The rule establishes two methods for determining the mercury baseline for a facility – the existing baseline developed using actual fuel consumption data and the proposed recurring annual baseline. Starting in 2015, the proposed rule revision goes to a current year mercury baseline determination procedure that requires significant fuel sampling and analysis for establishing annual compliance with a reduction based on fuel content. Moreover, WPL has installed continuous emission monitors (CMMs) on its coal-fired units and is in process of certifying these CMMs. How does the proposed fuel sampling, recurring annual baseline fit with a CMMs-based emission reading? WPL recommends that the proposed rule be revised to include the option of electing to use the existing baseline requirement under NR 446.06.*

Response

An alternative that is similar to the compliance approach in the current rule has been included that limits the need for an ongoing fuel sampling and analysis program to demonstrate compliance with the proposed revisions.

Issue

Where stack testing is required in demonstrating compliance the rule does not allow use of all EPA approved methods.

Select Comment

*Dairyland Power Cooperative. The reference methods for conducting mercury source performance tests listed in the 2008 Rule Proposal in sections NR 446.04(1)(c)1.a. and NR 446.08(1)(c)1. do not reflect the current complete list of EPA approved reference methods. ASTM D6784-02 ("Ontario Hydro Method") in 40 CFR Part 75, Section §75.6(43), incorporated by reference in s. NR 484.10 (55x), Method 30A in 40 CFR Part 60, Appendix A, and Method 30B in 40 CFR Part 60, Appendix A.*

Response

The department has included the requested methods in the proposed revisions.

Issue

A method is needed to determine compliance for more than one electric generating unit venting to a common stack.

Select Comment

*Wisconsin Power & Light. WPL suggest that the option of using combined fuel information and operational data of EGUs that are vented by way of a common stack be allowed for comparison to the total stack emission data as reported on the CEMs when fleet-wide averaging has not been elected as a compliance approach. Furthermore, WPL suggests that new units that have emissions vented through a common stack with existing units be addressed in the same fashion.*

Response

A provision is included in the proposed revisions that provides a method of determining compliance where multiple electric generating units vent to a common stack.

Issue

Mercury continuous emissions monitors and the compliance monitoring methods allowed for demonstrating compliance with the 2010 to 2014 emission requirements are limited to those specified in the rule.

Select Comments

*Wisconsin Power & Light. The proposed rule revision indicates that the Department will promulgate CMMs requirements by December 31, 2013. Therefore, prior to this date, the use of CMMs would need approval as an alternative compliance approach. WPL requests that the option to use CMMs under NR 446.18 be directly allowed prior to 2014, without requesting this as an alternative approach.*

*Wisconsin Public Service Corporation. The language in this section [NR 446.06(5)] is unclear as to whether it is intended to apply to units that combust oil, either as a primary or emergency fuel. The use of*

*the phrase "exclusively combust natural gas" indicates that combustion turbines that fire oil, even as an emergency fuel, will be required to conduct performance tests. All of WPSC's combustion turbines occasionally combust fuel oil. This is to ensure that each unit is operable on its emergency fuel. The requirement to conduct mercury performance testing on these units adds a significant expense and would yield no significant results.*

Response

Under existing s. NR 439 provisions a utility may utilize a continuous emissions monitoring system in demonstrating compliance with the mercury requirements prior to 2015. And, if found necessary, the department can approve the use of continuous emissions monitoring or other monitoring methods and procedures under s. NR 446.08(3).

Issue

Fuels such as biomass, fuel oil, or natural gas, should be exempt from fuel monitoring requirements.

Select Comment

*Wisconsin Power & Light. WPL recommends that the proposed rules exclude renewable fuels from mercury content requirements, similar to that for natural gas and fuel oil, referenced in the revisions at 446.04(1)(c)1.*

Response

The proposed revisions do not require the testing of liquids or gases. The Department has determined that the requirement to test all solid fuels, without any exemption, is appropriate.