

SUBJECT: Hearing authorization for AM-32-05, proposed rules revising chapters NR 440 and 446 to reduce mercury air emission from coal-fired electric generating units.

FOR: MARCH **2007 BOARD MEETING**

TO BE PRESENTED BY: Jon Heinrich, Environmental Analysis Section Chief, Bureau of Air Management

SUMMARY: This proposal was developed in response to a January 2007 Citizen Petition requesting revisions to Chapter NR 446 and to the federal Clean Air Mercury Rule (CAMR). The CAMR is a regulation promulgated by the United States Environmental Protection Agency (EPA). The proposed rules in AM-32-05 would allow the Department to implement the federal Clean Air Mercury Rule (CAMR) in Wisconsin. The CAMR requires the reduction of mercury emissions from new and existing coal-fired electrical generating units through a declining cap on mercury emissions expressed as annual state budgets in two phases, 2010 and 2018. The Wisconsin annual budget for 2010 to 2017 is 1,780 pounds of mercury which declines to 702 pounds of mercury in 2018 and every year thereafter. State mercury budgets are a permanent cap regardless of growth in the electrical sector. In addition, new sources (those that are constructed or modified after January 30, 2004) must meet a standard of performance (pounds of mercury per megawatt-hour) and any mercury emissions from these new sources must also be accommodated under the state mercury cap.

EPA gives states the choice of whether to use their national cap and trade program to achieve compliance with the CAMR or decline interstate trading and develop a state specific approach to meet federal mercury emission reduction requirements. Under the EPA's cap and trade approach, mercury allowances can be freely traded nationwide among electric utilities to meet annual mercury reduction requirements. The rule revisions proposed in NR 446 decline participation in the national trading program. These rule revisions also include provisions that commit the Department to adopting rules by June 30, 2010 that would require all coal-fired electrical generating units affected by the CAMR to reduce their mercury emissions 90% by January 1, 2020.

Public comments are expected on several issues. The proposed rules do not allow participation in the national emission trading program. In addition, the methodology used to allocate mercury allowances to affected coal-fired electrical generating units differs from the federal model rule and the proposed rules commit to future rulemaking that would require a 90% mercury emission reduction by 2020. Interested groups or parties include electric utilities, major electricity users, the Public Service Commission, Department of Administration, Department of Commerce and the general public.

RECOMMENDATION: That the Board authorize the Department to hold hearings on AM-32-05.

LIST OF ATTACHED MATERIALS:

- | | | | | | |
|----|-------------------------------------|---|-----|-------------------------------------|----------|
| No | <input type="checkbox"/> | Fiscal Estimate Required | Yes | <input checked="" type="checkbox"/> | Attached |
| No | <input checked="" type="checkbox"/> | Environmental Assessment or Impact Statement Required | Yes | <input type="checkbox"/> | Attached |
| No | <input type="checkbox"/> | Background Memo | Yes | <input checked="" type="checkbox"/> | Attached |

APPROVED:

/S/	3/6/07
_____	_____
Bureau Director, Kevin Kessler	Date
/S/	3/6/07
_____	_____
Administrator, Al Shea	Date
/S/	3/7/07
_____	_____
Secretary, Scott Hassett	Date

cc: Laurie Ross - AD/5	K. Kessler - AM/7	Jon Heinrich - AM/7
Carol Turner - LS/5	R. Eckdale - AM/7 (6)	Michael Scott - LS/5

DATE: March 6, 2007

TO: Members of the Natural Resources Board

FROM: Scott Hassett, Secretary

SUBJECT: Background Memo on Hearing Authorization Request for Rule Revisions to Chapter NR 446 that Adopt the Federal Clean Air Mercury Rule (CAMR) and Achieve Additional Mercury Reductions from Coal-Fired Electrical Generating Units after CAMR Implementation

Introduction

The Department is proposing revisions to the state's air mercury rule in response to three separate but related actions. They include promulgation of the federal Clean Air Mercury Rule (CAMR) in May 2005, a directive from Governor Doyle in August 2006 to further reduce mercury emissions, and a January 2007 Citizen Petition requesting revisions to Chapter NR 446.

The CAMR was promulgated by the United States Environmental Protection Agency (EPA) and requires the reduction of mercury emissions from new and existing coal-fired electrical generating units through a cap on mercury emissions expressed as an annual state emission budget that includes two phases of reductions. The initial phase begins in 2010 and continues until 2017. The second phase begins in 2018 and continues indefinitely. Wisconsin's budget during the first phase (2010 to 2017) is 0.890 tons (1,780 pounds) of mercury per year and declines to 0.351 tons (702 pounds) of mercury per year in 2018 and for every year thereafter. State mercury budgets are a permanent cap regardless of growth in the electrical sector. A national mercury emissions trading program has been developed by EPA as an option for states to meet CAMR state budget requirements.

Governor Doyle's directive issued on August 25, 2006, requires the Department to develop a rule achieving a 90% reduction of mercury emissions from coal-fired power plants. Governor Doyle's directive did not specify the deadline for achieving the 90% reduction.

The Citizen Petition was submitted on January 22, 2007, to the Department and Natural Resources Board under provisions in s. 227.11(2)(a) and 227.12(1) and (2), Wis. Stats., and NR 2.05 Wis. Adm. Code. The petition requests the Department and Board to conduct rulemaking proceedings to revise and adopt rules that require a 90% or greater reduction in of mercury to the air from coal-fired electrical generating units in the state.

Why are these rule revisions being proposed?

The proposed rule revisions in AM-32-05 would allow the Department to implement the federal Clean Air Mercury Rule (CAMR) in Wisconsin. Under the CAMR, each state is required to submit a plan that details the regulations that will be implemented to meet their statewide mercury emission budget including compliance dates, monitoring, record-keeping and reporting provisions. Failure to submit a timely and acceptable state plan will result in the imposition of a federal plan to implement the CAMR in

Wisconsin. EPA developed a model rule for states to use in developing their plans that would allow participation in a national mercury allowance trading program.

EPA required state plans to be submitted for review by November 17, 2006. At least 29 states, including Wisconsin, did not submit plans by the November deadline. EPA has stated that they would not take action to impose a federal plan if an acceptable state plan is submitted by fall 2007.

States are not prevented by EPA from requiring reductions beyond those required in their state mercury emission budget. However, in Wisconsin, our state mercury rule includes a commitment to be consistent with federal emission standards once they were adopted (s. NR 446.029 Wis. Adm. Code). The commitment to be consistent also includes federal administrative requirements including baseline determination, monitoring, reporting and recordkeeping. The rule revisions being proposed meet the commitment to be consistent in our existing state mercury rule.

These rule revisions also include provisions that commit the Department to adopting rules by June 30, 2010, that would establish a requirement that all coal-fired electrical generating units affected by the CAMR apply control technology to reduce their mercury emissions 90% by January 1, 2020. These requirements would not occur until after the second and final phase of the CAMR becomes effective in 2018. The additional mercury emission reductions beyond those required in the CAMR would meet both Governor Doyle's August 2006 Directive to achieve a 90% reduction from coal-fired electrical generating units and the January 2007 Citizen Petition.

Rule Revisions Summary

Rule revisions to the state mercury rule (Chapter NR 446) being proposed for hearing authorization decline participation in EPA's national trading program to meet the CAMR state emission budget caps. Under EPA's program, mercury emission allowances can be banked for later use or freely traded nationwide among affected electric utilities to meet annual mercury reduction requirements. As a result, it is possible that many coal-fired electrical generating units could delay for many years or even avoid control equipment installations to reduce their mercury emissions by banking allowances or obtaining allowances from other electric utilities. An emission allowance is an authorization to emit an ounce of mercury.

In Wisconsin, this is particularly significant because waterbodies in the northern part of the state have characteristics that make them particularly susceptible to mercury contamination. EPA gives states the choice of whether to participate in their national program to achieve compliance with the CAMR or decline to participate in interstate trading and develop a state specific approach to meet the federal mercury emission reduction requirements.

The following revisions are included in this rulemaking to address the CAMR and Governor Doyle's Directive:

- Proposed revisions to Chapter NR 440 that adopts the federal New Source Performance Standards (NSPS) for mercury emission controls at coal-fired electric utility steam generating units that are constructed or reconstructed after January 30, 2004.
- Proposed revisions to Chapter NR 446 that requires each utility with coal-fired electrical generating units affected by the federal CAMR to meet an annual emission cap established

through a generation output based allocation of the state mercury emission budget EPA set for Wisconsin.

- 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.

Below is a brief summary of the provisions in AM-32-05.

Applicability

These provisions affect new and existing coal-fired utility boilers in the state serving generators larger than 25 MW, 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.

New Source Performance Standards

Proposed revisions to NR 440 establish a technology-based standard of performance (pounds of mercury per megawatt-hour) for new coal-fired electrical generating units (those that are constructed or modified after January 30, 2004). In addition to meeting this standard of performance, any mercury emissions from these new sources must also be accommodated under the state mercury cap.

Emission Standards

Annual system-wide mercury emission caps for each of the two reduction phases of the CAMR would be established for each Wisconsin utility with affected coal-fired electrical generating units under their control or ownership. The system-wide caps are established by summing the unit specific mercury allowance allocations provided to their affected units from a main allocation pool and if applicable, a new unit set-aside pool. Owners and operators can also elect to comply on a unit-by-unit basis.

Compliance

Beginning January 1, 2010, and every year thereafter, owners and operators of affected electrical generating units must hold enough mercury emission allowances to equal or exceed calendar mercury emissions from their units in a given year. Owners and operators will be required to maintain annual records of the mercury emissions and held mercury allowances. A compliance report for the previous year is required to be submitted to the Department by March 1.

Allowance Allocation

From 2010 to 2017, 95% of the state phase 1 emission budget of 1,780 pounds will be allocated in ounces of mercury (27,056 ounces). After 2018, 95% of the 702 pound per hour state phase 2 emission budget will be allocated (10,670 ounces). These portions of the state emission budget are the main allocation pool for units that have established an operating baseline.

The portion of the state emission budget remaining will be placed in a new unit set-aside and accessible by owners and operators by request. The new unit set-aside is 5% of the state budget and consists of allowances available for units that have not received allowances from the main allocation pool because

they have not established an operating baseline. The new unit set-aside of 5% of the total annual emission budget is the same percentage EPA proposed in their model rule for states for phase I. The Department is proposing a larger set-aside than the federal proposal because it is expected that Wisconsin will undergo a sustained period of growth in coal-fired generation. EPA proposed a 3% new unit set-aside for phase II. For 2010 through 2017 the new unit set-aside is 89 pounds (1,424 ounces) and beginning in 2018 and thereafter 35 pounds (562 ounces). For the purpose of allowance allocation, a unit is considered new if it commenced operation after January 1, 2001. The following table summarizes the mercury allowances available for allocation.

	State Mercury Emission Budget	Main Allocation Pool – 95%	New Unit Set-aside – 5%
Phase 1 (2010 - 2017)	28,480 ounces	27,056 ounces	1,424 ounces
Phase 2 (2018+)	11,232 ounces	10,670 ounces	562 ounces

Allowances allocated to electrical generating units will be determined by energy output instead of the heat input approach proposed in EPA’s model rule. Using energy output data to determine allowance allocations is the same approach used in Chapter NR 432 which also affects electrical generating units in Wisconsin and addresses requirements in the federal Clean Air Interstate Rule. The Board adopted Chapter NR 432 at its January 2007 meeting.

Notification of Allocation

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 electrical generating units for 2010, 2011 and 2012. Attachment A is an estimate of the mercury allowance allocations for each of those years for existing affected units and for each electric utility system using the allocation methodology proposed. Beginning in 2009 and thereafter written notifications by October 31st would be provided of the Department’s determination of mercury allowance allocations 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 30th for those requests received by May 1st. 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.

Monitoring and Reporting Requirements

All affected electrical generating units must comply with monitoring, recordkeeping and reporting provisions of the CAMR. This includes the installation of continuous emission monitors or sorbent traps for the measurement of total mercury emissions by specific deadlines.

How this proposal affects existing policy.

This proposal is consistent with existing DNR policy which is, as required under s. 285.11(6), Stats., to revise and implement state implementation plans for the purpose of prevention, abatement and control of air pollution in Wisconsin. The proposal is also consistent with the provisions of s. NR 446.029, Wis.

Adm. Code, that mandate that if a federal standard is promulgated the Department would revise the state mercury rule to meet the federal emission standard for mercury.

Has the Board dealt with these issues before? If so, when and why?

Yes. In June 2004, the Board adopted revisions to Chapter NR 446, Control of Mercury Emissions, that require mercury emission reductions from coal-fired electrical generating units operated by major utilities in the state. Wisconsin took action in advance of federal regulations because EPA was very slow to require emission reductions from the nation's largest source of mercury air emissions. The state mercury rule included a commitment to make revisions once a federal regulation was promulgated to ensure that Wisconsin's requirements were consistent with the federal emission standards and administrative requirements.

Who will be affected by the proposed rule revisions? How will they be affected?

The CAMR rule affects new and existing coal-fired utility boilers in the state that serve a generator larger than 25 MW that produces electricity for sale. Also affected is any coal-fired co-generation unit serving a generator with a nameplate capacity larger than 25 MW and either supplies more than 1/3 of its potential electric output capacity or 219,000 MWh, whichever is greater. In Wisconsin, the utilities with electrical generating units that are affected include Alliant Energy, Dairy Power Cooperative, Madison Gas & Electric Company, Manitowoc Public Utilities, MidAmerican Energy Company, WE Energies, Wisconsin Public Service Corporation and Xcel Energy. There are 48 existing coal-fired electrical generating units in Wisconsin.

Owners and operators will be required to meet system-wide mercury emission caps established through a allowance allocations that will be adjusted periodically to reflect operational changes and the construction of new generating units. Since the state budget will not increase with the addition of new units more control of existing units over time would be necessary. Allocations will also decline when the second phase reduction required in the CAMR takes affect in 2018. Wisconsin's annual budget for 2010 to 2017 is 1,780 pounds of mercury which declines to 702 pounds of mercury in 2018 and every year thereafter.

Not all states are adopting EPA's national trading program as their approach to meeting CAMR requirements. As of November 2006, 22 states have adopted or are considering more stringent approaches including greater reductions, reductions sooner then the CAMR schedule, or prohibiting or restricting trading of mercury allowances. State programs in 26 states are mostly consistent with EPA's trading program.

Among the states in EPA's Region 5, Illinois, Michigan and Minnesota are proposing or have adopted requirements more stringent than the CAMR including more mercury emission reductions sooner. Illinois and Michigan are declining participation in the national trading program. Ohio and Indiana are planning to adopt EPA's national trading program to meet CAMR requirements.

Information on Environmental Analysis

An environmental analysis of the impact of the proposed rule revisions is not needed because these changes are considered to be a Type III action under s. NR 150.03(3), Wis. Adm. Code. A Type III action is one that normally does not have the potential to cause significant environmental effects,

normally does not significantly affect energy usage and normally does not involve unresolved conflicts in the use of available resources.

Initial Regulatory Flexibility Analysis

The proposed rule revisions are not expected to have a significant effect on small businesses. The electrical generating units subject to the emission reduction requirements of the CAMR are not small businesses. Any costs which the electric utility industry incurs to meet the CAMR will likely to be passed on to their customers, which will include small businesses. As part of the federal rule promulgation process, the EPA is required under the Regulatory Flexibility Act to consider potential impacts of proposed regulations on small entities. After considering the economic impacts of the rule on small entities, EPA has concluded that the CAMR will not have a significant economic impact on a substantial number of small entities and has determined that it is not necessary to prepare a regulatory flexibility analysis. The small entity definition used by EPA includes: (1) electric utilities that produces 4 billion kilowatt-hours or less; (2) a small governmental jurisdiction that is a government of a city, county, town, district, or special district of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Attachment A

Table 1 - System-wide Mercury Emission Limitations (in pounds)

	2010	2011	2012
Alliant Energy	541.125	541.125	541.125
Dairyland Power Cooperative	209.5	209.5	209.5
Xcel Energy	5.125	5.125	5.125
Madison Gas & Electric Company	20.5	20.5	20.5
Manitowoc Public Utilities	12.375	12.375	12.375
Mid-American	1.0625	1.0625	1.0625
WE Energies	661.625	661.625	661.625
Wisconsin Public Service Corporation	239.625	239.625	239.625

Table 2 - Allocations of Mercury Allowances by Units (in ounces)

Unit Location	Unit Number	2010	2011	2012
Alma	B1	53	53	53
Alma	B2	54	54	54
Alma	B3	51	51	51
Alma	B4	175	175	175
Alma	B5	250	250	250
Bay Front	5	82	82	82
Blount Street	7	60	60	60
Blount Street	8	125	125	125
Blount Street	9	143	143	143
Columbia	1	2353	2353	2353
Columbia	2	2227	2227	2227
Edgewater	3	251	251	251
Edgewater	4	1221	1221	1221
Edgewater	5	1649	1649	1649
Genoa	1	1337	1337	1337
J.P. Madgett	B1	1432	1432	1432
Manitowoc Public Utilities	6	66	66	66
Manitowoc Public Utilities	7	66	66	66
Manitowoc Public Utilities	8	66	66	66
Nelson Dewey	1	386	386	386
Nelson Dewey	2	408	408	408
Pleasant Prairie	1	2608	2608	2608
Pleasant Prairie	2	2680	2680	2680
Port Washington	1	152	152	152
Port Washington	2	106	106	106
Port Washington	3	147	147	147
Port Washington	4	0	0	0
Pulliam	3	83	83	83
Pulliam	4	97	97	97

Unit Location	Unit Number	2010	2011	2012
Pulliam	5	214	214	214
Pulliam	6	269	269	269
Pulliam	7	337	337	337
Pulliam	8	586	586	586
Rock River	1	92	92	92
Rock River	2	71	71	71
South Oak Creek	5	892	892	892
South Oak Creek	6	881	881	881
South Oak Creek	7	1159	1159	1159
South Oak Creek	8	1205	1205	1205
Stoneman	B1	8	8	8
Stoneman	B2	9	9	9
Valley	1	189	189	189
Valley	2	189	189	189
Valley	3	189	189	189
Valley	4	189	189	189
Weston	1	259	259	259
Weston	2	422	422	422
Weston	3	1567	1567	1567

Fiscal Estimate — 2007 Session

<input checked="" type="checkbox"/> Original <input type="checkbox"/> Updated <input type="checkbox"/> Corrected <input type="checkbox"/> Supplemental	LRB Number AM-32-05	Amendment Number if Applicable
	Bill Number	Administrative Rule Number NR 440 and 446

Subject
 Mercury emission reductions from coal-fired electrical generating units.

Fiscal Effect

State: No State Fiscal Effect
 Indeterminate

Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation.

- | | |
|--|---|
| <input type="checkbox"/> Increase Existing Appropriation | <input type="checkbox"/> Increase Existing Revenues |
| <input type="checkbox"/> Decrease Existing Appropriation | <input type="checkbox"/> Decrease Existing Revenues |
| <input type="checkbox"/> Create New Appropriation | |

Increase Costs — May be possible to absorb within agency's budget.

Yes No

Decrease Costs

Local: No Local Government Costs

Indeterminate

1. Increase Costs
 Permissive Mandatory
2. Decrease Costs
 Permissive Mandatory

3. Increase Revenues
 Permissive Mandatory
4. Decrease Revenues
 Permissive Mandatory

5. Types of Local Governmental Units Affected:

- Towns Villages Cities
 Counties Others Manitowac Public
 School Districts WTCS Districts

Fund Sources Affected

- GPR FED PRO PRS SEG SEG-S

Affected Chapter 20 Appropriations

Assumptions Used in Arriving at Fiscal Estimate

SUMMARY OF RULE - The Clean Air Mercury Rule (CAMR) is a federal regulation promulgated by the United States Environmental Protection Agency (EPA). The CAMR requires the reduction of mercury emissions from new and existing coal-fired electrical generating units through a declining cap on mercury emissions expressed as annual state budgets in two phases, an initial phase beginning 2010 and a second phase that starts in 2018. State mercury budgets are a permanent cap regardless of growth in the electrical sector. A national trading program has been developed by EPA as an option for states to meet CAMR requirements. Revisions to NR 440 would adopt the technology-based standards of performance for new coal-fired electrical generating units that are constructed or modified after January 30, 2004. Revisions to NR 446 decline participation in EPA's national trading program adopt EPA's model rule which allows interstate trading of mercury allowances.

Under the proposed revisions system-wide mercury emission caps for each reduction phase of the CAMR would be established for each Wisconsin utility with affected coal-fired electrical generating units under their control or ownership. Beginning January 1, 2010, and every year thereafter owners and operators of affected electrical generating units must hold enough mercury emission allowances to equal or exceed calendar mercury emissions from their units in a given year.

FISCAL IMPACT - The CAMR affects 48 existing electrical generating units operated by eight utilities including Alliant Energy, Dairy Power Cooperative, Madison Gas & Electric Company, Manitowoc Public Utilities, MidAmerican Energy Company, WE Energies, Wisconsin Public Service Corporation and Xcel Energy. The rule revisions are not expected to affect state facilities and will impact one local government facility operated by Manitowoc Public Utility.

Owners and operators of affected electrical generating units will need to install mercury control technology on new units to meet the Federal New Source Performance Standards. These standards apply to any coal-fired electrical generating unit that commences operation after January 30, 2004. For existing coal-fired electrical generating units installation of control technology will be dictated by the annual mercury emission caps for each utility system and the mercury emissions from new units that need to be accommodated.

Long-Range Fiscal Implications

Prepared By:	Telephone No.	Agency
Joe Polasek	266-2794	Department of Natural Resources
Authorized Signature	Telephone No.	Date (mm/dd/ccyy)
	266-2794	

Fiscal Estimate — 2007 Session

Page 2 Assumptions Narrative Continued

LRB Number AM-32-05	Amendment Number if Applicable
Bill Number	Administrative Rule Number NR 440 and 446

Assumptions Used in Arriving at Fiscal Estimate – Continued

The United States Department of Energy's National Energy Technology Laboratory (NETL) has been conducting a mercury control technology program that has established a goal of having technologies ready for commercial demonstration by 2010 that can achieve 90% mercury control at a cost of \$35,000 per pound. In their October 2005 status report on the results of their field testing program DOE reported the following:

Significant progress has been made in developing effective mercury control technology over the past several years particularly for low-rank coals (i.e. lignite and sub-bituminous).

- Activated carbon injection and injection of other materials and oxidation (i.e. catalyst, chemical additives) are the most promising mercury control technologies.
- Estimated cost of mercury control on a \$ per pound removed basis have been reduced.
- By 2012 – 2015 broad commercial availability of mercury control technologies is projected to occur.

Retail electricity rates are projected to increase regardless of the compliance approach selected by each electric utility in the state. The Department is not expected to incur significant additional costs to implement the CAMR.

Fiscal Estimate Worksheet — 2007 Session
 Detailed Estimate of Annual Fiscal Effect

Original Updated
 Corrected Supplemental

LRB Number AM-32-05	Amendment Number if Applicable
Bill Number	Administrative Rule Number NR 440 and 446

Subject
 Mercury emission reductions from coal-fired electrical generating units.

One-time Costs or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):

Annualized Costs:		Annualized Fiscal Impact on State Funds from:	
		Increased Costs	Decreased Costs
A. State Costs by Category			
State Operations — Salaries and Fringes		\$	\$ -
(FTE Position Changes)		(FTE)	(- FTE)
State Operations — Other Costs			-
Local Assistance			-
Aids to Individuals or Organizations			-
Total State Costs by Category		\$	\$ -
B. State Costs by Source of Funds		Increased Costs	Decreased Costs
GPR		\$	\$ -
FED			-
PRO/PRS			-
SEG/SEG-S			-
State Revenues	Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.)	Increased Revenue	Decreased Revenue
GPR Taxes		\$	\$ -
GPR Earned			-
FED			-
PRO/PRS			-
SEG/SEG-S			-
Total State Revenues		\$	\$ -

Net Annualized Fiscal Impact

	<u>State</u>	<u>Local</u>
Net Change in Costs	\$ _____	\$ _____
Net Change in Revenues	\$ _____	\$ _____

Prepared By: Joe Polasek	Telephone No. 266-2794	Agency Department of Natural Resources
Authorized Signature	Telephone No. 266-2794	Date (mm/dd/ccyy)

ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD
REPEALING, RENUMBERING, RENUMBERING AND
AMENDING, AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board proposes an order to **repeal** NR 446.02(1c), (1n), (1w) and (6m), 446 subch. II(title), 446.029 to 446.04 and 446.055 to 446.12; to **renumber** NR 440.20(9)(g), (h) and (i) and 446.025; to **renumber and amend** NR 440.20(9)(j), 446.027 and 446.05; to **amend** NR 439.075(2)(b)1., 440.17(1) and (2)(intro.) and (a)12. and 22., 440.20(2)(j), (3)(a)(intro.), (5)(d), (6)(c), (g), (i) and (k)(intro.) and 1.d., (7)(a), (b)2., (f), (j)3., (k)3. and (L)(intro.) and (9)(a), 446.01(2) Note, 446 subch. III(title), 446.14, 446.15(3)(a), 446.16(1), 484.04(20m) and (26m), and 484.10(7) and (47m) and to **create** NR 400.02(45e), (91m), (92m), (146m) and (154m), 440.17(2)(a)62., 73. and 74. in Table 1 and (i)4., 440.20(2)(dm), (eg), (er), (fm), (gg), (jm), (ke), (km), (ks), (Lg), (Lr), (nm), (tm), (zr) and (zw), (3)(c) and (d), (4)(i) and (j), (5)(e) and (f), (5m), (6)(L) to (p), (7)(o) to (u), (8)(g) to (i), (9)(g) and (10), 446.03(title) and 446 subch. II relating to adoption of federal emission standard for mercury and additional mercury emission reductions.

AM-32-05

Summary Prepared by the Department of Natural Resources

1. **Statutes interpreted:** ss. 285.11(6), 285.11(9), 285.27(1)(a), and 285.27(2)(b), Stats. The State Implementation Plan developed under s. 285.11(6), Stats., is revised.
2. **Statutory authority:** ss. 227.11(2)(a), 227.14(1m), 285.11(1), 285.11(9), and 285.27(1)(a), Stats.
3. **Explanation of agency authority:** If an emission standard for an air pollutant is promulgated under section 111 of the Clean Air Act (CAA), the Department is required under s. 285.27(1)(a), Stats., to promulgate by rule a similar standard. Recently the U. S. Environmental Protection Agency (EPA) promulgated the Clean Air Mercury Rule (CAMR) under section 111 of the CAA. In addition, ch. NR 446.029, Wis. Adm. Code, mandates that if a federal emission standard for mercury is promulgated under section 111 (or 112) of the CAA, the Department shall adopt a similar standard and revise subchapter II of ch. NR 446, Wis. Adm. Code, accordingly. Since the CAMR was promulgated under section 111 and not 112 of the CAA, the Department may adopt a supplementary emission standard for mercury pursuant to s. 285.27(2)(b), Stats. Section 227.14(1m) authorizes the Department to use the format of federal regulations in preparing a proposed rule if all or part of the regulatory program is to be administered according to standards, requirements or methods which are either identical or similar to all or part of a federal environmental regulatory program. Section 227.11(2)(a), Stats. provides state agencies general authority to develop rules. Section 285.11(1), Stats. authorizes the Department to promulgate rules consistent with Chapter 285, Stats. Authority to develop and revise a state implementation plan to control air pollution in the state is provided under s. 285.11(6), Stats. and authority to prepare and adopt minimum standards for the emission of mercury is provided under and s. 285.11(9) stats.
4. **Related statute or rule:** Chapters NR 440 and 446, Wis. Adm. Code, New Source Performance Standards and Control of Mercury Emissions, respectively.
5. **Plain language analysis:** These rules are being proposed to allow the Department to implement the CAMR. The CAMR is a federal regulation promulgated by the EPA that requires the reduction of mercury emissions from new and existing coal-fired electrical generating units through a declining cap on mercury emissions expressed as annual state budgets in two phases, an initial phase beginning 2010 and a second phase that starts in 2018. State mercury budgets are a permanent cap regardless of growth in the electrical sector. A national trading program has been developed by EPA as an option for states to meet the CAMR requirements. Revisions to ch. NR 440, Wis. Adm. Code, adopt the technology-based standards of performance for new coal-fired electrical generating units that are constructed or modified after January 30, 2004.

These rule revisions decline participation in EPA's national trading option to meet the Clean Air Mercury Rule (CAMR). Instead annual system-wide mercury emission caps for each reduction phase of the CAMR would be established for each Wisconsin utility with affected coal-fired electrical generating units under their control or ownership. The system-wide caps are established by summing unit specific mercury allowance allocations provided to affected units from a main allocation pool and a new unit set-aside. Owners and operators can also elect to comply on a unit-by-unit basis. From 2010 to 2017, 95% of the state phase 1 emission budget of 1,780 pounds would be allocated in ounces of mercury (27,056 ounces). After 2018, 95% of the 702 pound per hour state phase 2 emission budget 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 and 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.

Beginning January 1, 2010, and every year thereafter owners and operators of affected electrical generating units must hold enough mercury emission allowances to equal or exceed calendar mercury emissions from their units in a given year. Owners and operators would be required to maintain annual records of the mercury emissions and mercury allowances held. A compliance report for the previous year is required to be submitted to the Department by March 1st.

6. Summary of, and comparison with, existing or proposed federal regulation: This federal regulation, issued by EPA in May 2005, established nationwide requirements to reduce mercury emissions from coal-fired electrical generating units. Under the CAMR each state is required to submit a plan that details the controls that will be implemented to meet their statewide mercury budget including compliance dates and monitoring, recordkeeping and reporting provisions. States are not prevented from requiring reductions beyond those required in the state mercury budget however in Wisconsin we committed to make our state mercury rule consistent with federal emission standards once they were adopted (s. NR 446.029 Wis. Adm. Code). The commitment to be consistent also includes federal administrative requirements including baseline determination, monitoring, reporting and recordkeeping. These rule revisions also include provisions that commit the Department to adopting rules by June 30, 2010, that would require all coal-fired electrical generating units affected by the CAMR to apply control technology to reduce their mercury emissions 90% by January 1, 2020. These requirements would not occur until after the second and final phase of the CAMR becomes effective in 2018.

7. Comparison with rules in adjacent states: Among Wisconsin's neighboring states; Illinois, Michigan and Minnesota are proposing to require more stringent requirements than the CAMR including more mercury emission reductions sooner. Iowa is planning to meet the CAMR requirements by adopting EPA's national trading program.

8. Summary of factual data and analytical methodologies: EPA's Clean Air Mercury Rule Web page, <http://www.epa.gov/air/mercuryrule/index.htm>, includes proposed and final rules, fact sheets, and other rulemaking documents as well as technical support information used in the preparation of these rule revisions.

9. Analysis and supporting documents used to determine effect on small business or in preparation of economic impact report: The proposed rule revisions are not expected to have a significant effect on small businesses. The electrical generating units subject to the emission reduction requirements of the CAMR are not small businesses. Any costs which the electric utility industry incurs to meet the CAMR will likely to be passed on to their customers, which will include small businesses. As part of the federal rule promulgation process, the EPA is required under the Regulatory Flexibility Act to consider potential impacts of proposed regulations on small entities. After considering the economic impacts of the rule on small entities, EPA has concluded that the CAMR will not have a significant economic impact on a substantial number of small entities and has determined that it is not necessary to prepare a regulatory flexibility analysis. The small entity definition used by EPA includes: (1) electric utilities that produces 4 billion kilowatt-hours or less; (2) a small governmental jurisdiction that is a government of a city, county,

town, district, or special district of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

10. Effect on small business: The proposed rules are not expected to have a significant effect on small businesses. It is expected that the costs of complying with the CAMR will be passed on to customers of electric utilities through increased electricity rates resulting in small businesses having to pay more for electricity.

11. Agency contact person:

Jon Heinrich
Phone (608) 267-7547
jon.heinrich@wisconsin.gov

12. Place where comments are to be submitted and deadline for submission:

Written comments may be submitted at the public hearings or by regular mail, fax or email to:

Jon Heinrich
Department of Natural Resources
Bureau of Air Management
PO Box 7921
Madison WI 53707
Fax: (608) 267-0560
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Written comments may also be submitted to the Department using the Wisconsin Administrative Rules Internet Web site at <http://adminrules.wisconsin.gov>.

Hearing dates and the comment submission deadline are to be determined.

The consent of the Attorney General and the Revisor of Statutes will be requested for the incorporation by reference of new test methods in s. NR 440.17(2)(a).

SECTION 1. NR 400.02(45e), (91m), (92m), (146m) and (154m) are created to read:

NR 400.02(45e) "Common stack" means a single flue through which emissions from 2 or more units are exhausted.

(91m) "Life-of-the-unit, firm power contractual arrangement" means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy generated by any specified unit and pays its proportional amount of the unit's total costs, pursuant to a contract:

(a) For the life of the unit;

(b) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or

(c) For a period no less than 25 years or 70% of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

(92m) "Lignite" means coal that is classified as lignite A or B according to the ASTM Standard Classification of Coals by Rank, D388-99e1 (2004), incorporated by reference in s. NR 484.10(7).

(146m) "Sorbent trap monitoring system" means the equipment required by 40 CFR part 75 for the continuous monitoring of Hg emissions, using paired sorbent traps containing iodinated charcoal or other suitable reagents. This excepted monitoring system consists of a probe, the paired sorbent traps, a heated umbilical line, moisture removal components, an air-tight sample pump, a dry gas meter, and an automated data acquisition and handling system. The monitoring system samples the stack gas at a rate proportional to the stack gas volumetric flow rate. The sampling is a batch process. Using the sample volume measured by the dry gas meter and the results of the analyses of the sorbent traps, the average Hg concentration in the stack gas for the sampling period is determined, in units of micrograms per dry standard cubic meter ($\mu\text{g}/\text{dscm}$). Mercury mass emissions for each hour in the sampling period are calculated using the average Hg concentration for that period, in conjunction with contemporaneous hourly measurements of the stack gas flow rate, corrected for the stack gas moisture content.

(154m) "Subbituminous" means coal that is classified as subbituminous A, B or C, according to the ASTM Standard Classification of Coals by Rank, D388-99e1 (2004), incorporated by reference in s. NR 484.10(7).

SECTION 2. NR 439.075(2)(b)1. is amended to read:

NR 439.075(2)(b)1. Compliance emission testing for mercury is required for an emission point subject to s. NR ~~446.06(1)(b), 446.09(1) or~~ 446.15(1), (2) or (3).

SECTION 3. NR 440.17(1) and (2)(intro.) as affected by AM-05-06 are amended to read:

NR 440.17(1) APPENDICES. Appendices A, B, C, F and I of 40 CFR part 60, Appendix B of 40 CFR part 61 and Appendices A, B, D, E ~~and~~ F and K of 40 CFR part 75, as in effect on the effective date of this subsection [revisor inserts date], are incorporated by reference and made a part of this chapter.

Copies of these Appendices are available for inspection in the offices of the department of natural resources and revisor of statutes, Madison, Wisconsin, or may be purchased for personal use from the superintendent of documents, U.S. government printing office, Washington DC 20402.

(2)(intro.) OTHER MATERIALS. The materials listed in this subsection are incorporated by reference for the corresponding sections noted. Some of the materials are also incorporated for Appendices A, B, C and F of 40 CFR part 60 and Appendix K of 40 CFR part 75 as in effect on the effective date of this subsection [revisor insert date]. Since these Appendices are incorporated by reference in this chapter by sub. (1), materials incorporated by reference in the Appendices are hereby also incorporated by reference and made a part of this chapter. The materials are available for inspection in the offices of the department of natural resources and revisor of statutes, Madison, Wisconsin or may be purchased for personal use at the corresponding address noted.

SECTION 4. NR 440.17(2)(a)12. and 22. in Table 1 as affected by AM-05-06 are amended to read:

NR 440.17(2)(a)

**Table 1
ASTM Standard References**

Standard Number	Standard Title	Incorporated by Reference For
12. ASTM D388-99 (reapproved 2004)	Standard Specification for Classification of Coals by Rank	NR 440.19(2)(a) and (6)(f)4.a., b. and f. NR 440.20(2)(b), (dm), (eg), (n) and (y) NR 440.205(2)(d) and (t) NR 440.207(2)(b) NR 440.42(2)(a) and (b)
22. ASTM D1835-97	Standard Specification for Liquefied Petroleum (LP) Gases	<u>NR 440.20(2)(nm)2.</u> NR 440.205(2)(y) NR 440.207(2)(q)

SECTION 5. NR 440.17(2)(a)62., 73. and 74. in Table 1 as affected by AM-05-06 are created to read:

NR 440.17(2)(a)

**Table 1
ASTM Standard References**

Standard Number	Standard Title	Incorporated by Reference For
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62. ASTM D4840-99 (2004)	Standard Guide for Sample Chain-of-Custody Procedures	40 CFR part 75, Appendix K, section 7.2.9
73. ASTM D6784-02	Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method)	40 CFR part 60, Appendix B, Performance Specification 12A, section 8.6.2
74. ASTM D6911-03	Standard Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis	40 CFR part 75, Appendix K, section 7.2.8

SECTION 6. NR 440.17(2)(i)4. is created to read:

NR 440.17(2)(i)4. EPA-454/R-98-015, Fabric Filter Bag Leak Detection Guidance, NTIS order no. PB98-164676, for s. NR 440.20(6)(o)4.b.

SECTION 7. NR 440.20(2)(dm), (eg), (er), (fm) and (gg) are created to read:

NR 440.20(2)(dm) "Bituminous coal" means coal that is classified as bituminous according to the ASTM Standard Specification for Classification of Coals by Rank D388-99 (reapproved 2004), incorporated by reference in s. NR 440.17(2)(a)12.

(eg) "Coal" means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the ASTM Standard Specification for Classification of Coals by Rank D388-99 (reapproved 2004), incorporated by reference in s. NR 440.17(2)(a)12., coal refuse, and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat, including solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are included in this definition for the purposes of this section.

(er) "Coal-fired electric utility steam generating unit" means an electric utility steam generating unit that burns coal, coal refuse, or a synthetic gas derived from coal either exclusively, in any combination together, or in any combination with other supplemental fuels in any amount. Examples of supplemental fuels include petroleum coke and tire-derived fuels.

(fm) "Cogeneration" means a facility that simultaneously produces both electrical, or mechanical, and useful thermal energy from the same primary energy source.

(gg) "Dry flue gas desulfurization technology" or "dry FGD" means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder

material is subsequently converted to another form. Alkaline slurries or solutions used in dry FGD technology include lime and sodium.

SECTION 8. NR 440.20(2)(j) is amended to read:

NR 440.20(2)(j) "Electric utility steam generating unit" means any ~~steam electric generating fossil fuel-fired combustion unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and~~ more than 25 MW electrical output to any utility power distribution system megawatts electric (MW) that serves a generator that produces electricity for sale. Any A unit that cogenerates steam supplied to a steam distribution system for the purpose of providing steam to a steam electric generator that would produce electrical energy and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MW output to any utility power distribution system for sale is also considered in determining the electrical energy output capacity of the affected facility an electric utility steam generating unit.

SECTION 9. NR 440.20(2)(jm), (ke), (km), (ks), (Lg), (Lr), (nm), (tm), (zr) and (zw) are created to read:

NR 440.20(2)(jm) "Electrostatic precipitator" or "ESP" means an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper.

(ke) "Emission limitation" means any emissions limit or operating limit.

(km) "Emission rate period" means any calendar month included in a 12- month rolling average period.

(ks) "Federally enforceable" means all limitations and conditions that are enforceable by the administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable state implementation plan, and any permit requirements established under 40 CFR 52.21 or 40 CFR 51.18 and 40 CFR 51.24.

(Lg) "Gaseous fuel" means any fuel derived from coal or petroleum that is present as a gas at standard conditions and includes refinery fuel gas, process gas and coke-oven gas.

(Lr) "Integrated gasification combined cycle electric utility steam generating unit" or "IGCC electric utility steam generating unit" means a coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No coal is directly burned in the unit during operation.

(nm) "Natural gas" means one of the following:

1. A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.

2. Liquid petroleum gas, as defined by the ASTM Standard Specification for Liquid Petroleum Gases D1835-03a, incorporated by reference in s. NR 440.17(2)(a)22.

(tm) "Responsible official" means responsible official as defined in 40 CFR 70.2.

(zr) "Wet flue gas desulfurization technology" or "wet FGD" means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet FGD technology include lime, limestone, and sodium.

(zw) "You" or "your " means the owner or operator of an electric utility steam generating unit or the applicant for a permit to construct an electric utility steam generating unit, unless the context indicates otherwise.

SECTION 10. NR 440.20(3)(a)(intro.) is amended to read:

NR 40.20(3)(a)(intro.) On and after the date on which the performance test required to be conducted under s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction or modification commenced before or on February 28, 2005, any gases which contain particulate matter in excess of:

SECTION 11. NR 440.20(3)(c) and (d) are created to read:

NR 440.20(3)(c) On and after the date on which the performance test required to be conducted under s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction or modification is commenced after February 28, 2005, except for modified affected facilities meeting the requirements of par. (d), any gases that contain particulate matter in excess of either:

1. 18 ng/J (0.14 lb/MWh) gross energy output; or
2. 6.4 ng/J (0.015 lb/MMBtu) heat input derived from the combustion of solid, liquid or gaseous fuel.

(d) As an alternative to meeting the requirements of par. (c), the owner or operator of an affected facility for which construction, reconstruction or modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the performance test required to be conducted under s. NR 440.08 is completed, the owner or operator subject to the provisions of this section may not cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction or modification commenced after February 28, 2005, any gases that contain particulate matter in excess of 13 ng/J (0.03 lb/MMBtu) heat input derived from the combustion of solid, liquid or gaseous fuel, and one of the following, as applicable:

1. 0.1% of the combustion concentration determined according to the procedure in sub. (6)(o)5. (99.9% reduction) for an affected facility for which construction or reconstruction commenced after February 28, 2005 when combusting solid fuel or solid-derived fuel; or
2. 0.2% of the combustion concentration determined according to the procedure in sub. (6)(o)5. (99.8% reduction) for an affected facility for which modification commenced after February 28, 2005 when combusting solid fuel or solid-derived fuel.

SECTION 12. NR 440.20(4)(i) and (j) are created to read:

NR 440.20(4)(i) On and after the date on which the performance test required to be conducted under s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction or

modification commenced after February 28, 2005, except as provided for under par. (j) or (k), any gases that contain sulfur dioxide in excess of the applicable emission limitation specified in subs. 1. to 3.

1. For an affected facility for which construction commenced after February 28, 2005, any gases that contain sulfur dioxide in excess of either:

- a. 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis; or
- b. 5% of the potential combustion concentration (95% reduction) on a 30-day rolling average basis.

2. For an affected facility for which reconstruction commenced after February 28, 2005, any gases that contain sulfur dioxide in excess of either:

- a. 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis;
- b. 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis; or
- c. 5% of the potential combustion concentration (95% reduction) on a 30-day rolling average basis.

3. For an affected facility for which modification commenced after February 28, 2005, any gases that contain sulfur dioxide in excess of either:

- a. 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis;
- b. 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis; or
- c. 10% of the potential combustion concentration (90% reduction) on a 30-day rolling average basis.

(j) On and after the date on which the performance test required to be conducted under s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction or modification commenced after February 28, 2005, and that burns 75% or more, by heat input, coal refuse on a 12-month rolling average basis, any gases that contain sulfur dioxide in excess of the applicable emission limitation specified in subs. 1. to 3.

1. For an affected facility for which construction commenced after February 28, 2005, any gases that contain sulfur dioxide in excess of either:

- a. 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis; or

b. 6% of the potential combustion concentration (94% reduction) on a 30-day rolling average basis.

2. For an affected facility for which reconstruction commenced after February 28, 2005, any gases that contain sulfur dioxide in excess of either:

- a. 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis;
- b. 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis; or
- c. 6% of the potential combustion concentration (94% reduction) on a 30-day rolling average basis.

(3) For an affected facility for which modification commenced after February 28, 2005, any gases that contain sulfur dioxide in excess of either:

- a. 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis;
- b. 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis; or
- c. 10% of the potential combustion concentration (90% reduction) on a 30-day rolling average basis.

SECTION 13. NR 440.20(5)(d) as affected by AM-05-06 is amended to read:

NR 440.20(5)(d)1. On and after the date on which the initial performance test required to be conducted under s. NR 440.08 is completed, no new source owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction commenced after July 9, 1997, but before or on February 28, 2005, any gases which contain nitrogen oxides, expressed as NO₂, in excess of 200 nanograms per joule (1.6 pounds per megawatt-hour) gross energy output, based on a 30-day rolling average, except as provided under sub. (6)(k)1.

2. On and after the date on which the initial performance test required to be conducted under s. NR 440.08 is completed, no existing source owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction commenced after July 9, 1997, but before or on February 28, 2005, any gases which contain nitrogen oxides, expressed as NO₂, in excess of 65 nanograms per joule (0.15 pounds per million Btu) heat input, based on a 30-day rolling average.

SECTION 14. NR 440.20(5)(e) and (f) and (5m) are created to read:

NR 440.20(5)(e) On and after the date on which the performance test required to be conducted under s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction or modification commenced after February 28, 2005, except for an IGCC electric utility steam generating unit meeting the requirements of par. (f), any gases that contain nitrogen oxides, expressed as NO₂, in excess of the applicable emission limitation specified in subds. 1. to 3.

1. For an affected facility for which construction commenced after February 28, 2005, the owner or operator may not cause to be discharged into the atmosphere any gases that contain nitrogen oxides, expressed as NO₂, in excess of 130 ng/J (1.0 lb/MWh) gross energy output on a 30-day rolling average basis, except as provided under sub. (6)(k).

2. For an affected facility for which reconstruction commenced after February 28, 2005, the owner or operator may not cause to be discharged into the atmosphere any gases that contain nitrogen oxides, expressed as NO₂, in excess of either:

- a. 130 ng/J (1.0 lb/MWh) gross energy output on a 30-day rolling average basis; or
- b. 47 ng/J (0.11 lb/MMBtu) heat input on a 30-day rolling average basis.

3. For an affected facility for which modification commenced after February 28, 2005, the owner or operator may not cause to be discharged into the atmosphere any gases that contain nitrogen oxides, expressed as NO₂, in excess of either:

- a. 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis; or
- b. 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis.

(f) On and after the date on which the performance test required to be conducted under s. NR 440.08 is completed, the owner or operator of an IGCC electric utility steam generating unit subject to the provisions of this section that burns liquid fuel as a supplemental fuel and for which construction, reconstruction or modification commenced after February 28, 2005, shall meet the requirements specified in subds. 1. to 3.

1. The owner or operator may not cause to be discharged into the atmosphere any gases that contain nitrogen oxides (expressed as NO₂) in excess of 130 ng/J (1.0 lb/MWh) gross energy output on a 30-day rolling average basis, except as provided for in subds. 2. and 3.

2. When burning liquid fuel exclusively or in combination with synthetic gas derived from coal such that the liquid fuel contributes 50% or more of the total heat input to the combined cycle combustion turbine, the owner or operator may not cause to be discharged into the atmosphere any gases that contain nitrogen oxides (expressed as NO₂) in excess of 190 ng/J (1.5 lb/MWh) gross energy output on a 30-day rolling average basis.

3. In cases when during a 30-day rolling average compliance period, liquid fuel is burned in such a manner to meet the conditions in subd. 2. for only a portion of the 30-day period, the owner or operator may not cause to be discharged into the atmosphere any gases that contain nitrogen oxides (expressed as NO₂) in excess of the computed weighted-average emissions limit based on the proportion of gross energy output (in MWh) generated during the compliance period for each of the emissions limits in subds. 1. and 2.

(5m) STANDARD FOR MERCURY. (a) For each coal-fired electric utility steam generating unit other than an IGCC electric utility steam generating unit, on and after the date on which the initial performance test required to be conducted under s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction, modification or reconstruction commenced after January 30, 2004, any gases which contain mercury (Hg) emissions in excess of each Hg emissions limit in subds. 1. to 5. that applies to you. The Hg emissions limits in subds. 1. to 5. are based on a 12-month rolling average using the procedures in sub. (8)(h).

1. For each coal-fired electric utility steam generating unit that burns only bituminous coal, you may not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 20×10^{-6} pound per megawatt hour (lb/MWh) or 0.020 lb/gigawatt-hour (GWh) on an output basis. The International System of Units (SI) equivalent is 0.0025 nanograms per joule (ng/J).

2. For each coal-fired electric utility steam generating unit that burns only subbituminous coal:

a. If your unit is located in a county-level geographical area receiving greater than 25 inches per year (in/yr) mean annual precipitation, based on the most recent publicly available U.S. department of agriculture 30-year data, you may not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 66×10^{-6} lb/MWh or 0.066 lb/GWh on an output basis. The SI equivalent is 0.0083 ng/J.

b. If your unit is located in a county-level geographical area receiving less than or equal to 25 in/yr mean annual precipitation, based on the most recent publicly available U.S. department of agriculture 30-year data, you may not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 97×10^{-6} lb/MWh or 0.097 lb/GWh on an output basis. The SI equivalent is 0.0122 ng/J.

3. For each coal-fired electric utility steam generating unit that burns only lignite, you may not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 175×10^{-6} lb/MWh or 0.175 lb/GWh on an output basis. The SI equivalent is 0.0221 ng/J.

4. For each coal-burning electric utility steam generating unit that burns only coal refuse, you may not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 16×10^{-6} lb/MWh or 0.016 lb/GWh on an output basis. The SI equivalent is 0.0020 ng/J.

5. For each coal-fired electric utility steam generating unit that burns a blend of coals from different coal ranks, i.e., bituminous coal, subbituminous coal, lignite, or a blend of coal and coal refuse, you may not discharge into the atmosphere any gases from a new affected source that contain Hg in excess of the monthly unit-specific Hg emissions limit established according to subd. 5.a. or b., as applicable to the affected unit.

a. If you operate a coal-fired electric utility steam generating unit that burns a blend of coals from different coal ranks or a blend of coal and coal refuse, you may not discharge into the atmosphere any gases from a new affected source that contain Hg in excess of the computed weighted Hg emissions limit based on the proportion of energy output, in Btu, contributed by each coal rank burned during the compliance period and its applicable Hg emissions limit in subds. 1. to 4. as determined using Equation 1 of this subsection. You shall meet the weighted Hg emissions limit calculated using Equation 1 of this subsection by calculating the unit emission rate based on the total Hg loading of the unit and the total Btu or megawatt hours contributed by all fuels burned during the compliance period.

$$EL_b = \frac{\sum_{i=1}^n EL_i (HH_i)}{\sum_{i=1}^n HH_i} \quad \text{Equation 1}$$

where:

EL_b is the total allowable Hg in lb/MWh that can be emitted to the atmosphere from any affected source being averaged under the blending provision

EL_i is the Hg emissions limit for the subcategory i (coal rank) that applies to the affected source, lb/MWh

HH_i is the electricity output from the affected source during the production period related to use of the corresponding subcategory i (coal rank) that falls within the compliance period, gross MWh generated by the electric utility steam generating unit

n is the number of subcategories (coal ranks) being averaged for an affected source

b. If you operate a coal-fired electric utility steam generating unit that burns a blend of coals from different coal ranks or a blend of coal and coal refuse together with one or more non-regulated, supplementary fuels, you may not discharge into the atmosphere any gases from the unit that contain Hg in excess of the computed weighted Hg emission limit based on the proportion of electricity output (in MWh) contributed by each coal rank burned during the compliance period and its applicable Hg emissions limit in subds. 1. to 4. as determined using Equation 1 of this subsection. You shall meet the weighted Hg emissions limit calculated using Equation 1 of this subsection by calculating the unit emission rate based on the total Hg loading of the unit and the total megawatt hours contributed by both regulated and nonregulated fuels burned during the compliance period.

(b) For each IGCC electric utility steam generating unit, on and after the date on which the initial performance test required to be conducted under s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility for which construction, modification or reconstruction commenced after January 30, 2004, any gases which contain Hg emissions in excess of 20×10^{-6} lb/MWh or 0.020 lb/GWh on an output basis. The SI equivalent is 0.0025 ng/J. This Hg emissions limit is based on a 12-month rolling average using the procedures in sub.

(8)(g).

SECTION 15. NR 440.20(6)(c), (g), (i), (k)(intro.) and 1.d. as affected by AM-05-06 are amended to read:

NR 440.20(6)(c)(title) ~~Compliance exception.~~ Exception to emission standards. The particulate matter emissions standards under sub. (3) ~~and~~ the nitrogen oxides emission standards under sub. (5) ~~and~~ the Hg emission standards under sub. (5m) apply at all times except during periods of startup, shutdown or malfunction. ~~The sulfur dioxide emission standards under sub. (4) apply at all times except during periods of startup, shutdown or when both emergency conditions exist and the procedures under par. (d) are implemented.~~

(g)(title) ~~Compliance calculations for SO₂ and NO_x and particulate matter.~~ 1. Compliance with applicable 30-day rolling average SO₂ and NO_x emission limitations shall be determined by calculating the arithmetic average of all hourly emission rates for SO₂ and NO_x for the 30 successive boiler operating days, except for data obtained during startup, shutdown, malfunction (NO_x only) or emergency conditions (SO₂ only).

2. Compliance with the applicable SO₂ percentage reduction requirement for SO₂ shall be determined based on the average inlet and average outlet SO₂ emission rates for the 30 successive boiler operating days.

3. Compliance with applicable daily average particulate matter emission limitations shall be determined by calculating the arithmetic average of all hourly emission rates for particulate matter, except for data obtained during startup, shutdown and malfunction, each boiler operating day.

(i)(title) ~~Compliance provisions for sources subject to sub. (5)(d)1. or (e)1.~~ The owner or operator of an affected facility subject to sub. (5)(d)1. or (e)1. shall calculate NO_x emissions by multiplying the average hourly NO_x output concentration measured according to the provisions of sub. (7)(c) by the average hourly flow rate measured according to the provisions of sub. (7)(L) and divided by the average hourly gross energy output measured according to the provisions of sub. (7)(k).

(k)(intro.)(title) ~~Compliance provisions for duct burners subject to sub. (5)(d)1 or (e)1.~~ To determine compliance with the emissions limits for NO_x required by sub. (5)(d)1. ~~or (e)1.~~ for duct burners used in combined cycle systems, either of the procedures described in subd. 1. or 2. shall be used.

1.d. Determine compliance with the emissions limits under sub. (5)(d)1. or (e)1. by the 3-run average (nominal 1-hour runs) for the initial and subsequent performance tests.

SECTION 16. NR 440.20(6)(L) to (p) are created to read:

NR 440.20(6)(L) *Compliance provisions for sources subject to sub. (5m)*. The owner or operator of an affected facility subject to sub. (5m), new sources constructed or reconstructed after January 30, 2004, shall calculate the Hg emission rate, in lb/MWh, for each calendar month of the year, using hourly Hg concentrations measured according to the provisions of sub. (7)(o) in conjunction with hourly stack gas volumetric flow rates measured according to the provisions of sub. (7)(L)1. or 2., and hourly gross electrical outputs, determined according to the provisions in sub. (7)(k). Compliance with the applicable standard under sub. (5m) is determined on a 12-month rolling average basis.

(m) *Compliance provisions for sources subject to sub. (4)(i)1.a. or (j)1.a.* The owner or operator of an affected facility subject to sub. (4)(i)1.a. or (j)1.a. shall calculate SO₂ emissions by multiplying the average hourly SO₂ output concentration, measured according to the provisions of sub. (7)(b), by the average hourly flow rate, measured according to the provisions of sub. (7)(L), and divided by the average hourly gross energy output, measured according to the provisions of sub. (7)(k).

(n) *Compliance provisions for sources subject to sub. (3)(c)1.* The owner or operator of an affected facility subject to sub. (3)(c)1. shall calculate particulate matter emissions by multiplying the average hourly particulate matter output concentration, measured according to the provisions of sub. (7)(s), by the average hourly flow rate, measured according to the provisions of sub. (7)(L), and divided by the average hourly gross energy output, measured according to the provisions of sub. (7)(k). Compliance with the emission limit shall be determined by calculating the arithmetic average of the hourly emission rates computed for each boiler operating day.

(o) *Compliance provisions for sources subject to sub. (3)(c)2. or (d).* Except as provided for in par. (p), the owner or operator of an affected facility for which construction, reconstruction or modification commenced after February 28, 2005, shall demonstrate compliance with each applicable emission limit according to the requirements in subds. 1. to 5.

1. Conduct an initial performance test according to the requirements in sub. (8) to demonstrate compliance by the applicable date specified in s. NR 440.08 and, thereafter, conduct the performance test annually.

2. An owner or operator shall use opacity monitoring equipment as an indicator of continuous particulate matter control device performance and demonstrate compliance with sub. (3)(b). In addition, baseline parameters shall be established as the highest hourly opacity average measured during the performance test. If any hourly average opacity measurement is more than 110% of the baseline level, the owner or operator shall conduct another performance test within 60 days to demonstrate compliance. A new baseline shall be established during each stack test. The new baseline may not exceed the opacity limit specified in sub. (3)(b).

3. An owner or operator using an ESP to comply with the applicable emission limits shall use voltage and secondary current monitoring equipment to measure voltage and secondary current to the ESP. Baseline parameters shall be established as average rates measured during the performance test. If a 3-hour average voltage and secondary current average deviates more than 10% from the baseline level, the owner or operator shall conduct another performance test within 60 days to demonstrate compliance. A new baseline shall be established during each stack test.

4. An owner or operator using a fabric filter to comply with the applicable emission limits shall install, calibrate, maintain and continuously operate a bag leak detection system according to this subd. 4.a. to h.

a. Install and operate a bag leak detection system for each exhaust stack of the fabric filter.

b. Each bag leak detection system shall be installed, operated, calibrated and maintained in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with the guidance provided in EPA-454/R-98-015, September 1997, incorporated by reference in s. NR 440.17(2)(i)4.

c. The bag leak detection system shall be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

d. The bag leak detection system sensor shall provide output of relative or absolute particulate matter loadings.

e. The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor.

f. The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel. Corrective actions shall be initiated within one hour of a bag leak detection system alarm. If the alarm is engaged for more than 5% of the total operating time on a 30-day rolling average, a performance test shall be performed within 60 days to demonstrate compliance.

g. For positive pressure fabric filter systems that do not duct all compartments of cells to a common stack, a bag leak detection system shall be installed in each baghouse compartment or cell.

h. Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

5. An owner or operator of a modified affected source electing to meet the emission limitations in sub. (3)(d) shall determine the percent reduction in particulate matter by using the emission rate for particulate matter determined by the performance test conducted according to the requirements in subd. 1. and the ash content on a mass basis of the fuel burned during each performance test run as determined by analysis of the fuel as fired.

(p) As an alternative to meeting the compliance provisions specified in par. (o), an owner or operator may elect to install, certify, maintain and operate a continuous emission monitoring system measuring particulate matter emissions discharged from the affected facility to the atmosphere and record the output of the system as specified in subds. 1. to 8.

1. The owner or operator shall submit a written notification to the department of intent to demonstrate compliance with this section by using a continuous monitoring system measuring particulate matter. This notification shall be sent at least 30 calendar days before the initial startup of the monitor for compliance determination purposes. The owner or operator may discontinue operation of the monitor and instead return to demonstration of compliance with this section according to the requirements in par. (o) by submitting written notification to the department of the intent at least 30 calendar days before shutdown of the monitor for compliance determination purposes.

2. Each continuous emission monitor shall be installed, certified, operated and maintained according to the requirements in sub. (7)(u).

3. The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under s. NR 440.08 or within 180 days of the date of notification to the department required under subd. 1., whichever is later.

4. Compliance with the applicable emissions limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emissions concentrations using the continuous monitoring system outlet data. The 24-hour block arithmetic average emission concentration shall be calculated using Method 19, section 4.1.

5. At a minimum, valid continuous monitoring system hourly averages shall be obtained for 90% of all operating hours on a 30-day rolling average. At least 2 data points per hour shall be used to calculate each 1-hour arithmetic average.

6. The 1-hour arithmetic averages required shall be expressed in ng/J, MMBtu/h, or lb/MWh and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under s. NR 440.13(5)(b).

7. All valid continuous monitoring system data shall be used in calculating average emission concentrations even if the minimum continuous emission monitoring system data requirements of par. (j)5. are not met.

8. When particulate matter emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks or zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the department, or Method 19 to provide, as necessary, valid emissions data for a minimum of 90% of all operating hours per 30-day rolling average.

SECTION 17. NR 440.20(7)(a), (b)2., (f) and (j)3. are amended to read:

NR 440.20(7)(a) ~~The~~ Except as provided for in pars. (t) and (u), owner or operator of an affected facility shall install, calibrate, maintain and operate a continuous monitoring system, and record the output of the system, for measuring the opacity of emissions discharged to the atmosphere, except where gaseous

fuel is the only fuel combusted. If opacity interference due to water droplets exists in the stack (for example, from the use of a flue gas desulfurization (FGD) system), the opacity shall be monitored upstream of the interference (at the inlet to the FGD system). If opacity interference is experienced at all locations (both at the inlet and outlet of the sulfur dioxide control system), alternate parameters indicative of the particulate matter control system's performance shall be monitored (subject to the approval of the department).

(b)2. For a facility which qualifies under the provisions of sub. (4)(d), (i), (j) or (k), sulfur dioxide emissions shall only be monitored as discharged to the atmosphere.

(f)1. ~~The~~ For units that began construction, reconstruction or modification on or before February 28, 2005, the owner or operator shall obtain emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement cannot be met with a continuous monitoring system, the owner or operator shall supplement emission data with other monitoring systems approved by the department or the reference methods and procedures as described in par. (h).

2. For units that began construction, reconstruction or modification after February 28, 2005, the owner or operator shall obtain emission data for at least 90% of all operating hours for each 30 successive boiler operating days. If this minimum data requirement cannot be met with a continuous monitoring system, the owner or operator shall supplement emission data with other monitoring systems approved by the department or the methods and procedures as described in par. (h).

(j)3. For Method 3, Method 3A or 3B may be used if the sampling time is one hour.

SECTION 18. NR 440.20(7)(k)3. and (L)(intro.) as created in AM-05-06, are amended to read:

NR 440.20(7)(k)3. For affected facilities generating process steam in combination with electrical generation, the gross energy output is determined from the gross electrical output measured in accordance with subd. 1. plus ~~50%~~ 75% of the gross thermal output (measured relative to ISO conditions) of the process steam measured in accordance with subd. 2.

(L)(intro.) The owner or operator of an affected facility demonstrating compliance with ~~the an~~ an output-based standard under ~~sub. (5)(d)1.~~ sub. (3), (4), (5) or (5m) shall do one of the following:

SECTION 19. NR 440.20(7)(o) to (u) are created to read:

NR 440.20(7)(o) The owner or operator of an affected facility demonstrating compliance with an Hg limit in sub. (5m) shall install and operate a continuous emissions monitoring system (CEMS) to measure and record the concentration of Hg in the exhaust gases from each stack according to the requirements in subds. 1. to 3. Alternatively, for an affected facility that is also subject to the requirements of 40 CFR part 75, Subpart I, the owner or operator may install, certify, maintain, operate and quality-assure the data from a Hg CEMS according to 40 CFR 75.10 and 40 CFR part 75, Appendices A and B, incorporated by reference in s. NR 440.17(1), in lieu of following the procedures in subds. 1. to 3.

1. The owner or operator shall install, operate and maintain each CEMS according to Performance Specification 12A in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 440.17(1).

2. The owner or operator shall conduct a performance evaluation of each CEMS according to the requirements of s. NR 440.13 and Performance Specification 12A in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 440.17(1).

3. The owner or operator shall operate each CEMS according to the requirements in subd. 3.a. to d.

a. As specified in s. NR 440.13(5)(b), each CEMS shall complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period.

b. The owner or operator shall reduce CEMS data as specified in s. NR 440.13(8).

c. The owner or operator shall use all valid data points collected during the hour to calculate the hourly average Hg concentration.

d. The owner or operator shall record the results of each required certification and quality assurance test of the CEMS.

4. Mercury CEMS data collection shall conform to subd. 4.a. to d.

a. For each calendar month in which the affected unit operates, valid hourly Hg concentration data, stack gas volumetric flow rate data, moisture data if required, and electrical output data, that is, valid data for all of these parameters, shall be obtained for at least 75% of the unit operating hours in the month.

b. Data reported to meet the requirements of this section may not include hours of unit startup, shutdown or malfunction. In addition, for an affected facility that is also subject to 40 CFR part 75, Subpart

I, data reported to meet the requirements of this section may not include data substituted using the missing data procedures in 40 CFR part 75, Subpart D, nor may the data have been bias adjusted according to the procedures of 40 CFR part 75.

c. If valid data are obtained for less than 75% of the unit operating hours in a month, you shall discard the data collected in that month and replace the data with the mean of the individual monthly emission rate values determined in the last 12 months. In the 12-month rolling average calculation, this substitute Hg emission rate shall be weighted according to the number of unit operating hours in the month for which the data capture requirement of subd. 4.a. was not met.

d. Notwithstanding the requirements of subd. 4.c., if valid data are obtained for less than 75% of the unit operating hours in another month in that same 12-month rolling average cycle, discard the data collected in that month and replace the data with the highest individual monthly emission rate determined in the last 12 months. In the 12-month rolling average calculation, this substitute Hg emission rate shall be weighted according to the number of unit operating hours in the month for which the data capture requirement of subd. 4.a. was not met.

(p) As an alternative to the CEMS required in par. (o), the owner or operator may use a sorbent trap monitoring system, as defined in s. NR 400.02(146m), to monitor Hg concentration, according to the procedures described in 40 CFR 75.15 and 40 CFR part 75, Appendix K, incorporated by reference in s. NR 440.17(1).

(q) For Hg CEMS that measure Hg concentration on a dry basis or for sorbent trap monitoring systems, the emissions data shall be corrected for the stack gas moisture content. A certified continuous moisture monitoring system that meets the requirements of 40 CFR 75.11(b) is acceptable for this purpose. Alternatively, the appropriate default moisture value, as specified in 40 CFR 75.11(b) or 75.12(b), may be used.

(r) The owner or operator shall prepare and submit to the administrator and the department for approval a unit-specific monitoring plan for each monitoring system, at least 45 days before commencing certification testing of the monitoring systems. The owner or operator shall comply with the requirements in your plan. The plan shall address all the requirements in subds. 1. to 6.

1. Installation of the CEMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of the exhaust emissions, e.g., on or downstream of the last control device.

2. Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems.

3. Performance evaluation procedures and acceptance criteria, e.g., calibrations, relative accuracy test audits (RATA), etc.

4. Ongoing operation and maintenance procedures in accordance with the general requirements of s. NR 440.13(4) or 40 CFR part 75, as applicable.

5. Ongoing data quality assurance procedures in accordance with the general requirements of s. NR 440.13(4) or 40 CFR part 75, as applicable.

6. Ongoing recordkeeping and reporting procedures in accordance with the requirements of this section.

(s) The owner or operator of an affected facility demonstrating compliance with the output-based emissions limitation under sub. (3)(c)1. shall install, certify, operate and maintain a continuous monitoring system for measuring particulate matter emissions according to the requirements of par. (u). An owner or operator of an affected source demonstrating compliance with the input-based emission limitation under sub. (3)(c)2. may install, certify, operate and maintain a continuous monitoring system for measuring particulate matter emissions according to the requirements of par. (u) in lieu of the requirements in sub. (6)(o).

(t) An owner or operator of an affected source that meets the conditions in either subd. 1. or 2. is exempted from the continuous opacity monitoring system requirements in par. (a) and the monitoring requirements in sub. (6)(o).

1. A continuous monitoring system for measuring particulate matter emissions is used to demonstrate continuous compliance on a boiler operating day average with the emissions limitations under sub. (3)(a)1. or (c)2. and is installed, certified, operated and maintained on the affected source according to the requirements of par. (u).

2. The affected source burns only oil that contains no more than 0.15% by weight sulfur, or liquid or gaseous fuels that when combusted without sulfur dioxide emission control, have a sulfur dioxide emissions rate less than or equal to 65 ng/J (0.15 lb/MMBtu) heat input.

(u) The owner or operator of an affected facility using a continuous emission monitoring system measuring particulate matter emissions to meet requirements of this section shall install, certify, operate and maintain the continuous monitoring system as specified in subds. 1. to 3.

1. The owner or operator shall conduct a performance evaluation of the continuous monitoring system according to the applicable requirements of s. NR 440.13, Performance Specification 11 in 40 CFR part 60, Appendix B, and procedure 2 in 40 CFR part 60, Appendix F, both incorporated by reference in s. NR 440.17(1).

2. During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 11 in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 440.17(1), particulate matter and oxygen, or carbon dioxide, data shall be collected concurrently, or within a 30 to 60-minute period, by both the continuous emission monitors and conducting performance tests using the following test methods.

a. For particulate matter, Method 5, 5B or 17 shall be used.

b. For oxygen or carbon dioxide, Method 3, 3A or 3B, as applicable shall be used.

3. Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in 40 CFR part 60, Appendix F, incorporated by reference in s. NR 440.17(1). Relative response audits shall be performed annually and response correlation audits shall be performed every 3 years.

SECTION 20. NR 440.20(8)(g) to (i) are created to read:

NR 440.20(8)(g) For the purposes of determining compliance with the emission limits in sub. (5m), the owner or operator of an electric utility steam generating unit which is also a cogeneration unit shall use the procedures in subds. 1. and 2. to calculate emission rates based on electrical output to the grid plus half of the equivalent electrical energy in the unit's process stream.

1. All conversions from Btu/hr unit input to MW unit output shall use equivalents found in s. NR 440.19(1)(a)1. for electric utilities.

Note: For example, 250 million Btu/hr input to an electric utility steam generating unit is equivalent to 73 MW input to the electric utility steam generating unit; 73 MW input to the electric utility steam generating unit is equivalent to 25 MW output from the boiler electric utility steam generating unit; therefore, 250 million Btu input to the electric utility steam generating unit is equivalent to 25 MW output from the electric utility steam generating unit.

2. Use Equation 1 below in lieu of Equation 5 in par. (h) to determine the monthly average Hg emission rates for a cogeneration unit.

$$ER_{\text{COGEN}} = \frac{M}{\left(V_{\text{grid}}\right) + \left(\frac{V_{\text{process}}}{2}\right)} \quad \text{Equation 1}$$

where:

ER_{COGEN} is the cogeneration Hg emission rate for a particular month, (lb/MWh)

M is the mass of Hg emitted from the stack over the same month, from Equation 2 or Equation 3 in par. (h), (lb)

V_{grid} is the amount of energy sent to the grid over the same month (MWh)

V_{process} is the amount of energy converted to steam for process use over the same month, (MWh)

(h) The owner or operator shall determine compliance with the Hg limit in sub. (5m) according to the procedures in subds. 1. to 3.

1. The initial performance test shall be commenced by the applicable date specified in s. NR 440.08(1). The required continuous monitoring systems shall be certified prior to commencing the test. The performance test consists of collecting hourly Hg emission data (lb/MWh) with the continuous monitoring systems for 12 successive months of unit operation (excluding hours of unit startup, shutdown and malfunction). The average Hg emission rate is calculated for each month, and then the weighted, 12-month average Hg emission rate is calculated according to subd. 2. or 3., as applicable. If, for any month in the initial performance test, the minimum data capture requirement in sub. (7)(o)4.a. is not met, the owner or operator shall report a substitute Hg emission rate for that month, as follows. For the first month, the

substitute monthly Hg emission rate shall be the arithmetic average of all valid hourly Hg emission rates recorded to date. For any subsequent month with insufficient data capture, the substitute monthly Hg emission rate shall be the highest valid hourly Hg emission rate recorded to date. When the 12-month average Hg emission rate for the initial performance test is calculated, for each month in which there was insufficient data capture, the substitute monthly Hg emission rate shall be weighted according to the number of unit operating hours in that month. Following the initial performance test, the owner or operator shall demonstrate compliance by calculating the weighted average of all monthly Hg emission rates (in lb/MWh) for each 12 successive calendar months, excluding data obtained during startup, shutdown or malfunction.

2. If a CEMS is used to demonstrate compliance, follow the procedures in subd. 2.a. to c. to determine the 12-month rolling average.

a. Calculate the total mass of Hg emissions over a month (M), in pounds (lb), using either Equation 2 in subd. 2.a.1) or Equation 3 in subd. 2.a.2), in conjunction with Equation 4 in subd. 2.a.3).

1) If the Hg CEMS measures Hg concentration on a wet basis, use Equation 2 below to calculate the Hg mass emissions for each valid hour:

$$E_h = K C_h Q_h t_h \quad \text{Equation 2}$$

where:

E_h is the Hg mass emissions for the hour, (lb)

K is the units conversion constant, 6.24×10^{-11} lb-scm/ μ g-scf

C_h is the hourly Hg concentration, wet basis, (μ g/scm)

Q_h is the hourly stack gas volumetric flow rate, (scfh)

t_h is the unit operating time, i.e., the fraction of the hour for which the unit operated. For example, $t_h = 0.50$ for a half hour of unit operation and 1.00 for a full hour of operation.

2) If the Hg CEMS measures Hg concentration on a dry basis, use Equation 3 below to calculate the Hg mass emissions for each valid hour:

$$E_h = K C_h Q_h t_h (1 - B_{ws}) \quad \text{Equation 3}$$

where:

E_h is the Hg mass emissions for the hour, (lb)

K is the units conversion constant, 6.24×10^{-11} lb-scm/ μ g-scf

C_h is the hourly Hg concentration, dry basis, (μ g/dscm)

Q_h is the hourly stack gas volumetric flow rate, (scfh)

t_h is the unit operating time, i.e., the fraction of the hour for which the unit operated

B_{ws} is the stack gas moisture content, expressed as a decimal fraction (e.g., for 8% H₂O, $B_{ws} = 0.08$)

3) Use Equation 4, below, to calculate M , the total mass of Hg emitted for the month, by summing the hourly masses derived from Equation 2 or 3, as applicable:

$$M = \sum_{h=1}^n E_h \quad \text{Equation 4}$$

where:

M is the total Hg mass emissions for the month, (lb)

E_h is the Hg mass emissions for hour h , from Equation 2 or 3 of this subdivision, (lb)

n is the number of unit operating hours in the month with valid CEM and electrical output data, excluding hours of unit startup, shutdown and malfunction

b. Calculate the monthly Hg emission rate on an output basis (lb/MWh) using Equation 5. For a cogeneration unit, use Equation 1 in par. (g) instead.

$$ER = \frac{M}{T} \quad \text{Equation 5}$$

where:

ER is the monthly Hg emission rate, (lb/MWh)

M is the total mass of Hg emissions for the month, from Equation 4, (lb)

P is the total electrical output for the month, for the hours used to calculate M, (MWh)

c. Until 12 monthly Hg emission rates have been accumulated, calculate and report only the monthly averages. Then, for each subsequent calendar month, use Equation 6 to calculate the 12-month rolling average as a weighted average of the Hg emission rate for the current month and the Hg emission rates for the previous 11 months, with one exception. Calendar months in which the unit does not operate may not be included in the 12-month rolling average.

$$E_{\text{avg}} = \frac{\sum_{i=1}^{12} (\text{ER})_i n_i}{\sum_{i=1}^{12} n_i} \quad \text{Equation 6}$$

where:

E_{avg} is the weighted 12-month rolling average Hg emission rate, (lb/MWh)

$(\text{ER})_i$ is the monthly Hg emission rate, for month i, (lb/MWh)

n is the number of unit operating hours in month i with valid CEM and electrical output data, excluding hours of unit startup, shutdown and malfunction

3. If a sorbent trap monitoring system is used in lieu of a Hg CEMS, as described in 40 CFR 75.15 and in 40 CFR part 75, Appendix K, incorporated by reference in s. NR 440.17(1), calculate the monthly Hg emission rates using Equations 3 to 5 of this paragraph, except that for a particular pair of sorbent traps, C_h in Equation 3 shall be the flow-proportional average Hg concentration measured over the data collection period.

(i) Daily calibration drift (CD) tests and quarterly accuracy determinations shall be performed for Hg CEMS in accordance with Procedure 1 of 40 CFR part 60, Appendix F, incorporated by reference in s. NR 440.17(1). For the CD assessments, you may use either elemental mercury or mercuric chloride (Hg^0 or HgCl_2) standards. The 4 quarterly accuracy determinations shall consist of one RATA and 3 measurement error (ME) tests using HgCl_2 standards, as described in section 8.3 of Performance Specification 12A in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 440.17(1). Hg standards may be used if the

Hg monitor does not have a converter. Alternatively, the owner or operator may implement the applicable daily, weekly, quarterly and annual quality assurance (QA) requirements for Hg CEMS in 40 CFR part 75, Appendix B, incorporated by reference in s. NR 440.17(1), in lieu of the QA procedures in 40 CFR part 60, Appendices B and F, incorporated by reference in s. NR 440.17(1). Annual RATA of sorbent trap monitoring systems shall be performed in accordance with 40 CFR part 75, Appendices A and B, incorporated by reference in s. NR 440.17(1), and all other quality assurance requirements specified in 40 CFR part 75, Appendix K, incorporated by reference in s. NR 440.17(1), shall be met for sorbent trap monitoring systems.

SECTION 21. NR 440.20(9)(a) is amended to read:

NR 440.20(9)(a) For sulfur dioxide, nitrogen oxides ~~and~~, particulate matter and Hg emissions, the performance test data from the initial and subsequent performance test and from the performance evaluation of the continuous monitors (including the transmissometer) shall be submitted to the department.

SECTION 22. NR 440.20(9)(g), (h), (i) and (j) as affected by AM-05-06 are renumbered NR 440.20(9)(h), (i), (j) and (k) and as renumbered NR 440.20(9)(k) is amended to read:

NR 440.20(9)(k) The owner or operator of an affected facility may submit electronic quarterly reports for SO₂, NO_x ~~and~~ opacity or Hg in lieu of submitting the written reports required under pars. (b), (g) and ~~(h)(i)~~. The format of each quarterly electronic report shall be coordinated with the department. The electronic report shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this section was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the department to obtain agreement to submit reports in this alternative format.

SECTION 23. NR 440.20(9)(g) and (10) are created to read:

NR 440.20(9)(g) For Hg, all the following information shall be reported to the department:

1. Company name and address.

2. Date of report and beginning and ending dates of the reporting period.
3. The applicable Hg emission limit (lb/MWh).
4. For each month in the reporting period, all of the following:
 - a. The number of unit operating hours.
 - b. The number of unit operating hours with valid data for Hg concentration, stack gas flow rate, moisture (if required), and electrical output.
 - c. The monthly Hg emission rate (lb/MWh).
 - d. The number of hours of valid data excluded from the calculation of the monthly Hg emission rate, due to unit startup, shutdown and malfunction.
 - e. The 12-month rolling average Hg emission rate (lb/MWh).
5. The data assessment report (DAR) required by 40 CFR part 60, Appendix F, incorporated by reference in s. NR 440.17(1), or an equivalent summary of QA test results if the QA of 40 CFR part 75 are implemented.

(10) RECORDKEEPING REQUIREMENTS. The owner or operator of an affected facility subject to the emissions limitations in s. NR 440.20(5m) shall provide notifications in accordance with s. NR 440.07(1) and shall maintain records of all information needed to demonstrate compliance including performance tests, monitoring data, fuel analyses, and calculations, consistent with the requirements of s. NR 440.07(6).

SECTION 24. NR 446.01(2) Note is amended to read:

NR 446.01(2) Note: Subchapter III of this chapter is based on the federal regulations contained in 40 CFR part 61, Subpart E, created October 14, 1975, as last revised ~~September 23, 1988~~ October 17, 2000.

SECTION 25. NR 446.02(1c), (1n), (1w) and (6m) are repealed.

SECTION 26. NR 446 subch. II(title) and 446.029 to 446.04 are repealed.

SECTION 27. NR 446.025 is renumbered NR 446.03(1).

SECTION 28. NR 446.027 is renumbered NR 446.04 and as renumbered, NR 446.04(intro.), (1)(a) and (c) and (2)(intro.) are amended to read:

NR 446.04(intro.) Except as provided in ~~s. NR 446.09~~ subchs. II and III, beginning on January 1, 2005, the owner or operator of a major stationary source shall calculate annual mercury emissions using the procedures and methods in this section.

(1)(a) The owner or operator of a combustion unit at the source which is not subject to ~~s. NR 446.09 subch. II or III~~ shall calculate annual mercury emissions using the procedures of this subsection for each emissions unit and shall provide all associated data to the department.

(c) ~~The 1. Except as provide in subd. 2., the~~ owner or operator shall calculate the removal efficiency of mercury by air pollution control equipment for each fuel used ~~in one of the following ways except natural gas and fuel oil, based on source performance tests on the equipment conducted according to the following methods and procedures:~~

~~1. Based on a. The source performance tests on the equipment following the testing procedures in s. NR 446.09(3) shall be conducted according to Method 101A in 40 CFR part 61, Appendix B, incorporated by reference in s. NR 484.04(23), or Method 29 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04(20m).~~

~~b. A sample of the fuel burned during the test shall be analyzed for mercury content, using ASTM D3684-01, incorporated by reference in s. NR 484.10 (47m), or an equivalent method approved by the department. During each of the 3 runs of the performance test, a separate sample of the fuel being burned during the run shall be collected and analyzed.~~

~~c. During the source performance testing, the consumption of fuel shall be monitored and recorded.~~

~~2. Based on~~ Instead of conducting a source performance test under subd. 1., information derived from performance testing of other combustion units which are similar in terms of the type of combustion unit, particulate control equipment, fuel characteristics, and operating parameters may be used if the performance test is conducted according to the procedures in subd. 1.

(2)(intro.) The owner or operator of a process unit at the source which is not subject to subch. III shall calculate and report annual mercury emissions from the process unit using the procedures and methods of this subsection and shall provide all associated data to the department. The calculations shall apply a mass balance approach, emission test data, or both, as follows:

SECTION 29. NR 446.03(title) is created to read:

NR 446.03(title) **Mercury emission limits.**

SECTION 30. NR 446.05 is renumbered NR 446.03(2) and as renumbered NR 446.03(2)(b) and (c) are amended to read:

NR 446.03(2)(b) New or modified stationary sources that are subject to an emission limit for mercury required under section 111 or 112 of the Act (42 USC 7411 and 7412 respectively) are exempt from the requirements of this section.

(c) Except as provided in ~~sub. (2) par. (b)~~, this section applies to all new or modified sources for which an air permit application was submitted or should have been submitted to the department under ~~sub. (1) par. (a)~~ on or after the first day of the calendar month following October 1, 2004.

SECTION 31. NR 446.055 to 446.12 are repealed.

SECTION 32. NR 446 subch. II to follow NR 446.04 is created to read:

NR 446 subch. II

Subchapter II - Mercury Emissions from Coal-fired Electric Generating Units

NR 446.05 Applicability; purpose (1) APPLICABILITY. Except as provided in this subsection, this subchapter applies to the owner or operator of a coal-fired electrical generating unit serving at any time, since the startup of the unit's combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale. A cogeneration unit which otherwise satisfies the applicability statement of this subsection is exempt from this subchapter if the cogeneration unit does not serve at any time, since the later of November 15, 1990 or the start-up of the cogeneration unit's combustion chamber, a

generator with a nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the cogeneration unit's potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale. If a coal-fired electrical generating unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the coal-fired electrical generating unit shall become subject to this subchapter starting on the day on which the coal-fired electrical generating unit first no longer qualifies as a cogeneration unit. For the purpose of this subchapter, a coal-fired electrical generating unit satisfying the applicability statement in this subsection shall be referred to as an affected unit.

(2) **PURPOSE.** This subchapter is adopted under ss. 227.11(2)(a), 227.14(1m), 285.11(9), and 285.27(1)(a), Stats., and establishes the general provisions, emission standards, compliance schedules, permitting, allowance allocation and emission monitoring provisions, to meet the requirements of section 111 of the Act (42 USC 7411) and 40 CFR 60.24(h)(6).

NR 446.06 Definitions The definitions contained in ch. NR 400 and in s. NR 446.02 apply to the terms used in this subchapter. In addition, the following definitions apply to the terms used in this subchapter:

(1) "Acid rain emissions limitation" means a limitation on emissions of sulfur dioxide or nitrogen oxides under the acid rain program.

(2) "Allocate" or "allocation" means the determination by the department of the amount of mercury allowances to be assigned to an affected unit under s. NR 446.08.

(3) "Automated data acquisition and handling system" or "DAHS" means that component of the continuous emission monitoring system, or other emissions monitoring system approved for use under s. NR 446.12, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required under s. NR 446.11.

(4) "Boiler" means an enclosed combustion device used to produce heat and to transfer heat to recirculating water, steam or other medium.

(5) "Bottoming-cycle cogeneration unit" means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

(6) "CAIR NO_x annual trading program" means a multi-state nitrogen oxides air pollution control and emission reduction program established by the administrator in accordance with 40 CFR part 97 Subparts AA to HH and 40 CFR 51.123(p) and 52.35 or approved and administered by the administrator under provisions of a state implementation plan that are approved under 40 CFR 51.123(o)(1) or (2), as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

(7) "CAIR NO_x ozone season trading program" means a multi-state nitrogen oxides air pollution control and emission reduction program established by the administrator in accordance 40 CFR part 97 Subparts AAAA to HHHH and 40 CFR 51.123(ee) and 52.35 or administered by the administrator under provisions of a state implementation plan that are approved under 40 CFR 51.123(aa)(1) and (bb)(1), (aa)(2) and (bb)(1), (bb)(2) or (dd), as a means of mitigating interstate transport of ozone and nitrogen oxides.

(8) "CAIR SO₂ trading program" means a multi-state sulfur dioxide air pollution control and emission reduction program approved and administered by the administrator in accordance with 40 CFR part 96, Subparts AAA to III and 40 CFR 51.124, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

(9) "Coal-fired" means combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during a specified year.

(10) "Cogeneration unit" means a stationary, coal-fired boiler or stationary, coal-fired combustion turbine which has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating or cooling purposes through the sequential use of energy and which during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity, does one of the following as appropriate:

(a) For a topping-cycle cogeneration unit, produces useful thermal energy not less than 5% of total energy output and useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5% of total energy input if useful thermal energy produced is 15% or more of total energy output,

or not less than 45% of total energy input if useful thermal energy produced is less than 15% of total energy output.

(b) For a bottoming-cycle cogeneration unit, produces useful power not less than 45% of total energy input.

(11) "Combustion turbine" means an enclosed device comprising a compressor, a combustor and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine. If the enclosed device is combined cycle, the combustion turbine includes any associated duct burner, heat recovery steam generator and steam turbine.

(12) "Continuous emissions monitoring system" or "CEMS" means the equipment required under s. NR 446.12 to sample, analyze, measure and provide, by means of readings recorded at least once every 15 minutes, using an automated data acquisition and handling system, a permanent record of mercury emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration, as applicable, in a manner consistent with 40 CFR part 75.

(13) "Control period" means the period beginning January 1 of a calendar year and ending on December 31 of the same year, inclusive.

(14) "Gross electrical output" means electricity made available for use, including any electricity used in the power production process. That process includes any on-site processing or treatment of fuel combusted at the affected unit and any on-site emission controls.

(15) "Heat input" means, with regard to a specified period of time, the product, in mmBtu/time, of the gross calorific value of the fuel, in Btu/lb, divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device, in lb of fuel/time, as measured, recorded and reported to the department and determined by the department in accordance with s. NR 446.11 and excluding the heat derived from preheated combustion air, recirculated flue gases or exhaust from other sources.

(16) "Heat input rate" means the amount of heat input, in mmBtu, divided by unit operating time, in hours, or, with regard to a specific fuel, the amount of heat input attributed to the fuel, in mmBtu, divided by the unit operating time, in hours, during which the unit combusts the fuel.

(17) "Mercury allowance" means a limited authorization issued by the department to emit one ounce of mercury during a calendar year under the provisions set forth in this subchapter.

(18) "MWh" means megawatt hours.

(19) "Nameplate capacity" means, starting from the initial installation of a generator, the maximum electrical generating output, in MWe, that the generator is capable of producing on a steady-state basis and during continuous operation, when not restricted by seasonal or other deratings, as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output, in MWe, that the generator is capable of producing on a steady-state basis and during continuous operation, when not restricted by seasonal or other deratings, the increased maximum amount as specified by the person conducting the physical change.

(20) "Sequential use of energy" means either of the following:

(a) For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process.

(b) For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

(21) "Topping-cycle cogeneration unit" means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

(22) "Total energy input" means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself.

(23) "Total energy output" means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

(24) "Useful power" means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any energy used in the power production process. The power production process includes any on-site processing or treatment of fuel combusted at the cogeneration unit and any on-site emission controls.

(25) "Useful thermal energy" means, with regard to a cogeneration unit, thermal energy that is any of the following:

(a) Made available to an industrial or commercial process, not a power production process, excluding any heat contained in condensate return or makeup water.

(b) Used in a heat application, such as space heating or domestic hot water heating.

(c) Used in a space cooling application, such as thermal energy used by an absorption chiller.

(26) "Utility power distribution system" means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

NR 446.07 Available mercury allowances. (1) TOTAL MERCURY ALLOWANCES

AVAILABLE. The total allocation of mercury allowances for the control periods 2010 to 2017 may not exceed 28,480 ounces annually. The total allocation of mercury allowances for the control period 2018 and thereafter may not exceed 11,232 ounces annually.

(2) MAIN ALLOCATION POOL MERCURY ALLOWANCES. The allocation of mercury allowances from the main allocation pool under s. NR 446.08(2) may not exceed 27,056 ounces for the 2010 through 2017 control periods and may not exceed 10,670 ounces for the 2018 control period and thereafter.

(3) NEW UNIT SET-ASIDE MERCURY ALLOWANCES. The allocation of mercury allowances from the new unit set-aside under s. NR 446.08(3) may not exceed 1,424 ounces for the 2010 through 2017 control periods and may not exceed 562 ounces for the 2018 control period and thereafter.

NR 446.08 Mercury allowance allocation. The department shall use the procedures in this section for calculating and allocating mercury allowances.

(1) UNIT BASELINES. (a) *Calculating baseline energy output.* The department shall calculate the baseline energy output of each affected unit, in MWh, according to the following equations as appropriate:

1. For an affected unit that is a cogeneration unit and that has operated for 2 or more consecutive calendar years, by using one of the following equations:

a. Use equation 1a if unit-level data for equation 1a is available for all cogeneration units serving the same generator:

$$B = GE_{avg} + \left(\frac{TE_{avg}}{3.4} \right) \quad \text{Equation 1a}$$

where:

B is the baseline energy output made available by the cogeneration unit in MWh

GE_{avg} is the average of the cogeneration unit's annual gross electric output in MWh over the 2-year period identified in par. (b)

TE_{avg} is the average of the cogeneration unit's annual useful thermal energy in mmBtu over the 2-year period identified in par. (b)

3.4 is a conversion factor in mmBtu/MWh

b. Use equation 1b if unit-level data for equation 1a is not available for all cogeneration units serving the same generator:

$$B_i = \left(GE_{Gen} + \frac{TE_T}{3.4} \right) \times \left(\frac{NC_i}{\sum_{j=1}^n NC_j} \right) \quad \text{Equation 1b}$$

where:

B_i is the baseline energy output made available by cogeneration unit i in MWh

GE_{Gen} is the average of the annual gross electric output in MWh for the generator served over the 2-year period identified in par. (b)

TE_T is the average of the annual useful thermal energy in mmBtu for the generator served over the 2-year period defined in par. (b)

3.4 is a conversion factor in mmBtu/MWh

NC_i is the nameplate capacity of cogeneration unit i

n is the number of boilers and combustion turbines serving the same generator

2. For an affected unit that is not a cogeneration unit and has operated for 2 or more consecutive calendar years, by using one of the following equations as appropriate:

a. Use equation 2a if unit-level data for equation 2a is available for all affected units serving the same generator:

$$B = GE_{avg} \quad \text{Equation 2a}$$

where:

B is the baseline energy output made available by the affected unit in MWh

GE_{avg} is the average of the affected unit's annual gross electric output in MWh over the 2-year period identified in par. (b)

b. Use equation 2b if unit-level data for equation 2a is not available for all affected units serving the same generator:

$$B_i = GE_{Gen} \times \left(\frac{NC_i}{\sum_{j=1}^n NC_j} \right) \quad \text{Equation 2b}$$

where:

B_i is the baseline energy output made available by affected unit i in MWh

GE_{Gen} is the average of the annual gross electric output in MWh for the generator served over the 2-year period identified in par. (b)

NC_i is the nameplate capacity of unit i

n is the number of boilers and combustion turbines serving the same generator

(b) *Periodic updates of baseline energy output for affected units with more than 2 years operating data.* The department shall use the procedures in this paragraph for calculating the unit baseline energy output for each affected unit which has more than 2 years of operating data.

1. No later than 60 days from the effective date of this subchapter ...[revisor insert date], the department shall calculate the baseline energy output for each affected unit for 2010 to 2012 allowances using data for the years 2003 to 2004.

2. On or before May 1, 2009, and on or before May 1 of every second year thereafter, the department shall calculate the baseline energy output for each affected unit for the next 2-year allocation

period using data from the 2-calendar-year period beginning 7 years before the first year of the allocation period and ending 6 years before the first year of the allocation period.

Note: For example in 2009, unit baseline energy output for the calculation of allocation for 2013 to 2014 allowances will be calculated using data from the years 2006 to 2007. In 2011, unit baseline energy output for the calculation of the allocation for 2015 to 2016 will be calculated using data from 2008 to 2009.

(c) *Baseline energy output for new affected units and affected units achieving 2 years of operating data for the first time.* The department shall use the procedures in this paragraph for calculating the baseline energy output for each affected unit which has only 2 years of operating data.

1. On or before May 1, 2009, and on or before May 1 of every year thereafter, the department shall calculate the baseline energy output for an affected unit that has been operating for its first 2 consecutive years, using the first 2 years of operating data. Once the affected unit's baseline energy output has been established, the affected unit's baseline energy output shall be updated according to par. (b).

Note: Starting in 2009, and every year thereafter, new affected units that commence operation on or after January 1, 2001 will have their unit baseline energy output calculated once the affected unit has 2 consecutive years of operating data. The 2 years of data do not have to be full years of data. Once the affected unit has 2 or more years of operating data, the affected unit is then incorporated into the state baselines calculated in sub. (2) and receives allocations from the main allocation pool under sub. (3). New affected units are incorporated into the main allocation pool on a yearly basis.

(d) *Baseline energy output for retired units.* If an affected unit is retired in any year, the department shall calculate the baseline energy output according to par. (b). If an affected unit being retired only operates a portion of the year in which it is retired, the data for that portion shall constitute the unit's data for that year.

Note: The following is an example of how a retired unit's baseline energy output is calculated. A unit is retired in 2011. In 2011, unit baselines are updated using 2008 to 2009 annual data that will be used to calculate allocations for 2015 to 2016. For 2015 to 2016 allocations, the retired unit would receive all allowances based upon its unit baseline for 2008 to 2009 operating data even though it is no longer operating. In 2013, the next unit baseline updating year, the baseline for the unit would be determined using 2010 to 2011 data. The 2013 updated baseline would be used to determine allocations for 2017 to 2018. If the unit had some operating data in 2011, it would receive minimal allowances in 2017 to 2018 based on the amount of electrical generation in 2011. The next unit update would occur in 2015 and would use 2012 to 2013 operating data. Since the unit would have no operating data for this time

period it would no longer receive allocations. Under this procedure a unit that is retired in 2011 may receive allowances until 2018.

(e) *Data used for energy generation baselines.* In performing the baseline energy output calculations under pars. (a) to (d), the department shall use data reported to EPA under 40 CFR part 97, Subpart HH and available from the EPA. If the required data is unavailable from the EPA, the department shall request the required data directly from the affected unit's owner or operator. If the owner or operator does not provide data within 30 days of the department's request, the department shall estimate the affected unit's baseline energy output using best available data.

(2) STATE BASELINE. The department shall calculate an annual state baseline by summing the unit baselines calculated according to sub. (1) for all affected units.

Note: The state baseline is updated annually starting in 2009 to incorporate new units that have 2 years of operating data and for which a unit baseline has been established under sub. (1)(a) and (b). Once a new unit has an established baseline, it is eligible for allowances from the main allocation pool.

(3) MAIN ALLOCATION POOL ALLOWANCE ALLOCATIONS. (a) No later than 60 days from the effective date of this subchapter ...[revisor inset date] and in 2009, and annually thereafter, the department shall allocate to all affected units for which a unit baseline has been calculated under sub. (1), the total amount of mercury allowances available under s. NR 446.07(2).

(b) The department shall allocate mercury allowances to each affected unit in an amount determined by equation 3:

$$A_i = MAP \times \left(\frac{B_i}{B_s} \right) \quad \text{Equation 3}$$

where:

A_i is the annual allocation of mercury allowances for unit i rounded to the nearest whole ounce, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed the allowances available under s. NR 446.07(2)

MAP is the main allocation pool of mercury allowances in ounces available under s. NR 446.07(2)

B_i is the unit baseline established under sub. (1) for affected unit i

B_s is the state baseline as determined under sub. (2)

(4) NEW UNIT SET-ASIDE ALLOCATIONS. (a) In 2010 and annually thereafter, the department shall allocate mercury allowances to affected units for which a request is received under par. (b).

(b) The owner or operator of an affected unit that is eligible under par. (c) and that commenced operation on or after January 1, 2001, may submit to the department a request to be allocated mercury allowances under this subsection, starting with 2010 or the first calendar year after the calendar year in which the affected unit commences commercial operation, whichever is later, and until the first calendar year for which the unit is eligible for and is allocated mercury allowances under sub. (2). The mercury allocation request under this paragraph shall be submitted on or before May 1 of the calendar year for which the mercury allowances are requested and after the date on which the affected unit commences commercial operation.

(c) An owner or operator of an affected unit may submit a request under par. (b) if the affected unit meets one of the following criteria:

1. The affected unit commenced operation on or after January 1, 2001 and a baseline energy output cannot be determined for the affected unit under sub. (1).

2. The affected unit commenced operation on or after January 1, 2001 and has a baseline energy output, but all mercury allowances under sub. (2) for the calendar year have already been allocated.

(d) The department shall review each mercury allocation request submitted under par. (b) and allocate mercury allowances for each calendar year as follows:

1. The department shall establish the maximum amount of new unit set-aside mercury allowances a unit is eligible for based upon a request submitted under par. (b).

2. Before June 30 of each calendar year, the department shall determine the sum of all mercury allowances established under subd. 1. for all new units in the calendar year.

3. If the amount of mercury allowances available in the new unit set-aside for the calendar year under s. NR 446.07(3) is greater than or equal to the sum determined under subd. 2., the department shall allocate the amount of mercury allowances determined under subd. 1. to each affected unit for which an allocation request was submitted.

4. If the amount of the mercury allowances available in the new unit set-aside for the calendar year under s. NR 446.07(3) is less than the sum determined under subd. 2., the department shall allocate to each affected unit for which the department established a maximum amount under subd. 1. greater than zero, an amount determined using equation 4:

$$N_i = NUSA \times \left(\frac{R_i}{\sum_{j=1}^k R_j} \right) \quad \text{Equation 4}$$

where:

N_i is the allocation of mercury set-aside allowances for new unit i for the calendar year rounded to the nearest whole ounce, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed the allowances available under s. NR 446.07(3)

$NUSA$ is the new unit set-aside established under par. (a)

R_i is the amount of mercury allowances the department determined unit i is eligible for under subd. 1.

k is the number of units for which the department established an amount greater than 0 under subd. 1.

(e) The department shall notify each owner or operator that submitted an allocation request under par. (b) of the amount of mercury allowances allocated for the calendar year to the affected unit covered by the request.

(f) New unit set-aside allowances shall only be used for emissions from units which requested the allowances under par. (b).

(5) ALLOCATION NOTIFICATIONS (a) *Main allocation pool mercury allowance notification for 2010, 2011 and 2012.* The department shall provide written notification to owners and operators of affected units of the department's determination under s. NR 446.08(3) of mercury allowance allocations from the main allocation pool for the control periods 2010, 2011 and 2012 no later than 60 days from the effective date of this subchapter ...[revisor insert date].

(b) *Main allocation pool mercury allowance notification after 2012.* Beginning October 31, 2009, and on or before October 31 of every year thereafter, the department shall provide written notification to

owners and operators of affected units of the department's determination under s. NR 446.08(3) of mercury allowance allocations from the main allocation pool for the control period 4 years in the future.

(c) *New unit set-aside mercury allowance notification.* Beginning June 30, 2010, and on or before June 30 of every year thereafter, the department shall provide written notification to owners and operators providing requests under s. NR 446.08(4)(b) of the department's determination under s. NR 446.08(3) of mercury allowance allocations from the new unit set-aside.

(d) The department shall issue administrative orders under the authority of s. 285.13(2), Stats., to owners and operators that establish mercury allocations for affected units within 45 days after the written notifications in pars. (a) to (c).

(6) **RETIREMENT OF NEW UNIT SET-ASIDE ALLOWANCES NOT ALLOCATED.** After completion of the procedures under sub. (4), any mercury allowances remaining in the new unit set-aside allocations for the control period shall be retired for that control period from the new unit set-aside allocations.

NR 446.09 Mercury emission standards. (1) Beginning January 1, 2010, no owner or operator of an affected unit may cause, allow or permit mercury emissions from an affected unit under their ownership or control to exceed the mercury allowances allocated to the affected unit under s. NR 406.08 for any control period.

(2) Compliance with sub. (1) for a control period may be demonstrated by either of the following methods:

(a) *Unit-by-unit compliance.* The owner or operator may demonstrate that the mercury emissions from each affected unit under their ownership or control does not exceed mercury allowances allocated to that unit.

(b) *System-wide compliance.* The owner or operator may demonstrate that the sum of the mercury emissions from affected units under their ownership or control does not exceed the sum of the mercury allowances allocated to those affected units.

(3) Notwithstanding sub. (2)(b), new unit set-aside mercury allowances shall only be used to demonstrate compliance for units for which they have been allocated.

NR 446.10 Annual compliance determination and reporting. (1) By March 1, 2011, and on or before March 1 of every year thereafter, the owner or operator of an affected unit shall report to the department mercury emissions for the prior year control period from all affected units under their ownership or control. This report shall include all of the following:

- (a) The compliance method selected under s. NR 446.09.
- (b) The mercury emissions for each affected unit for the prior year control period.
- (c) The mercury allowances allocated to each affected unit for the prior year control period under s. NR 446.08(3) or (4).

(2) Owners and operators of affected units shall use the procedures in s. NR 446.12 to determine mercury emissions included in their annual report.

NR 446.11 Permit requirements. (1) No later than 18 months after the effective date of this subchapter ... [revisor insert date], the owner or operator of an affected unit shall submit an application for renewal or modification of the unit's operation permit.

(2) The permit applications required under sub. (1) shall include all the applicable requirements identified in this subchapter.

NR 446.12 Emission monitoring. (1) GENERAL REQUIREMENTS. The owner or operator of an affected unit shall comply with the monitoring, recordkeeping and reporting requirements as provided in this section, and 40 CFR part 75, Subpart I.

(a) *Requirements for installation, certification and data accounting.* The owner or operator of each affected unit shall do all of the following:

1. Install all monitoring systems required under this section for monitoring mercury mass emissions and individual unit heat input, including all systems required to monitor mercury concentration, stack gas moisture content, stack gas flow rate, and CO₂ or O₂ concentration, as applicable, in accordance with 40 CFR 75.81 and 75.82.

2. Successfully complete all certification tests required under sub. (2) and meet all other requirements of this section and 40 CFR part 75, Subpart I applicable to the monitoring systems required under subd. 1.

3. Record, report and quality-assure the data from the monitoring systems required under subd. 1.

(b) *Compliance deadlines.* The owner or operator of an affected unit shall meet the monitoring system certification and other requirements of par. (a)1. and 2. on or before the following dates. The owner or operator shall record, report and quality-assure the data from the monitoring systems required under par.

(a)1. on and after the following dates:

1. For an affected unit that commences commercial operation before July 1, 2008, by January 1, 2009.

2. For an affected unit that commences commercial operation on or after July 1, 2008, by the later of the following dates:

a. January 1, 2009.

b. 90 affected unit operating days or 180 calendar days, whichever occurs first, after the date on which the affected unit commences commercial operation.

3. For an affected unit for which construction of a new stack or flue or installation of add-on mercury emission controls, a flue gas desulfurization system, a selective catalytic reduction system, or a compact hybrid particulate collector system is completed after the applicable deadline under subd. 1. or 2., by 90 affected unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue, add-on mercury emissions controls, flue gas desulfurization system, selective catalytic reduction system, or compact hybrid particulate collector system.

(c) *Reporting data.* 1. Except as provided in subd. 2., the owner or operator of an affected unit that does not meet the applicable compliance date set forth in par. (b) for any monitoring system required under par. (a)1. shall, for the monitoring system, determine, record and report maximum potential, or, as appropriate, minimum potential, values for mercury concentration, stack gas flow rate, stack gas moisture content and any other parameters required to determine mercury mass emissions and heat input in accordance with 40 CFR 75.80(g).

2. The owner or operator of an affected unit that does not meet the applicable compliance date set forth in par. (b)3. for any monitoring system required under par. (a)1. shall, for the monitoring system, determine, record and report substitute data using the applicable missing data procedures in 40 CFR part 75, Subpart D, in lieu of the maximum potential or minimum potential values, as appropriate, for a parameter if the owner or operator demonstrates that there is continuity between the data streams for that parameter before and after the construction or installation under par. (b)3.

(d) *Prohibitions.* 1. No owner or operator of an affected unit may use any alternative monitoring system, alternative reference method or any other alternative to any requirement of this section without having obtained prior written approval in accordance with sub. (6).

2. No owner or operator of an affected unit may operate the affected unit so as to discharge, or allow to be discharged, mercury emissions to the atmosphere without accounting for all the emissions in accordance with the applicable provisions of this section and 40 CFR part 75, Subpart I.

3. No owner or operator of an affected unit may disrupt any portion of the continuous emission monitoring system, or any other approved emission monitoring method, and thereby avoid monitoring and recording mercury mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing or maintenance is performed in accordance with the applicable provisions of this section and 40 CFR part 75, Subpart I.

4. No owner or operator of an affected unit shall retire or permanently discontinue use of any portion of the continuous emission monitoring system, or any other approved monitoring system under this section, except under any one of the following circumstances:

a. The owner or operator is monitoring emissions from the affected unit with another certified monitoring system approved, in accordance with the applicable provisions of this section and 40 CFR part 75, Subpart I, by the department for use at that affected unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system.

b. The owner or operator submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system in accordance with sub. (2)(c)3.a.

(2) INITIAL CERTIFICATION AND RECERTIFICATION PROCEDURES. (a) The owner or operator of an affected unit shall be exempt from the initial certification requirements of this section for a monitoring system required under sub. (1)(a)1. if all of the following conditions are met:

1. The monitoring system has been previously certified in accordance with 40 CFR part 75.

2. The applicable quality-assurance and quality-control requirements of 40 CFR 75.21 and 40 CFR part 75, Appendix B, incorporated by reference in s. NR 484.04(26m), are fully met for the certified monitoring system described in subd. 1.

(b) The recertification provisions of this section shall apply to a monitoring system required under sub. (1)(a)1. exempt from initial certification requirements under par. (a).

(c) Except as provided in par. (a), the owner or operator of an affected unit shall comply with the following initial certification and recertification procedures for a continuous monitoring system, e.g., a continuous emission monitoring system and an excepted monitoring system, sorbent trap monitoring system, under 40 CFR 75.15 required under sub. (1)(a)1. The owner or operator of a unit that qualifies to use the mercury low mass emissions excepted monitoring methodology under 40 CFR 75.81(b) or that qualifies to use an alternative monitoring system under 40 CFR part 75, Subpart E shall comply with the procedures in par. (d) or (e) respectively.

1. 'Requirements for initial certification.' The owner or operator shall ensure that each monitoring system required under sub. (1)(a)1., including the automated data acquisition and handling system, successfully completes all of the initial certification testing required under 40 CFR 75.20 by the applicable deadline in sub. (1)(b). In addition, whenever the owner or operator installs a monitoring system to meet the requirements of this subsection in a location where monitoring system was not previously installed, initial certification in accordance with 40 CFR 75.20 is required.

2. 'Requirements for recertification.' Whenever the owner or operator makes a replacement, modification or change in any certified continuous emission monitoring system, or an excepted monitoring system, sorbent trap monitoring system, under 40 CFR 75.15, required under sub. (1)(a)1. that may significantly affect the ability of the system to accurately measure or record mercury mass emissions or heat input rate or to meet the quality assurance and quality control requirements of 40 CFR 75.21 or 40 CFR part 75, Appendix B, incorporated by reference in s. NR 484.04(26m), the owner or operator shall

recertify the monitoring system in accordance with 40 CFR 75.20(b). Furthermore, whenever the owner or operator makes a replacement, modification or change to the flue gas handling system or the affected unit's operation that may significantly change the stack flow or concentration profile, the owner or operator shall recertify each continuous emission monitoring system, and each excepted monitoring system, sorbent trap monitoring system, under 40 CFR 75.15, whose accuracy is potentially affected by the change, in accordance with 40 CFR 75.20(b).

Note: Examples of changes to a continuous emission monitoring system that require recertification include replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site.

3. 'Approval process for initial certification and recertification.' Subdivisions 3.a. to d. apply to both initial certification and recertification of a continuous monitoring system required under sub. (1)(a)1. For recertifications, the word "recertification" shall be applied instead of the words "certification" and "initial certification" and the word "recertified" shall be applied instead of the word "certified," and the procedures in 40 CFR 75.20(b)(5) shall be followed in lieu of the procedures in subd. 3.e.

a. The owner or operator shall submit to the department and the administrator written notice of the dates of certification testing, in accordance with sub. (4).

b. The owner or operator shall submit to the department a certification application for the monitoring system. A complete certification application shall include the information specified in 40 CFR 75.63.

c. The provisional certification date for a monitoring system shall be determined in accordance with 40 CFR 75.20(a)(3). A provisionally certified monitoring system may be used for a period not to exceed 120 days after receipt by the department of the complete certification application for the monitoring system under subd. 3.b. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of 40 CFR part 75, shall be considered valid quality-assured data, retroactive to the date and time of provisional certification, provided that the department does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the department.

d. The department shall issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under subd. 3.b. In the event the department does not issue a notice within the 120-day period, each monitoring system that meets the applicable performance requirements of 40 CFR part 75 and is included in the certification application shall be deemed certified for use.

1) If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of 40 CFR part 75, the department shall issue a written notice of approval of the certification application within 120 days of receipt.

2) If the certification application is not complete, the department shall issue a written notice of incompleteness that sets a reasonable date by which the owner or operator shall submit the additional information required to complete the certification application. If the owner or operator does not comply with the notice of incompleteness by the specified date, the department may issue a notice of disapproval under subd. 3.d.3). The 120-day review period may not begin before receipt of a complete certification application.

3) If the certification application shows that any monitoring system does not meet the performance requirements of 40 CFR part 75 or if the certification application is incomplete and the requirement for disapproval under subd. 3.d.2) is met, the department shall issue a written notice of disapproval of the certification application. Upon issuance of a notice of disapproval, the provisional certification is invalidated by the department and the data measured and recorded by each uncertified monitoring system may not be considered valid quality-assured data beginning with the date and hour of provisional certification, as defined under 40 CFR 75.20(a)(3). The owner or operator shall follow the procedures for loss of certification in subd. 3.e. for each monitoring system that is disapproved for initial certification.

4) The department may issue a notice of disapproval of the certification status of a monitor in accordance with sub. (3)(b).

e. If the department issues a notice of disapproval of a certification application under subd. 3.d.3) or a notice of disapproval of certification status under subd. 3.d.4), the owner or operator shall do the following as appropriate:

1) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under 40 CFR 75.20(a)(4)(iii), or 40 CFR 75.21(e) and continuing until the applicable date and hour specified under 40 CFR 75.20(a)(5)(i):

i) For a disapproved mercury pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of mercury and the maximum potential flow rate, as defined in sections 2.1.7.1 and 2.1.4.1 of 40 CFR part 75, Appendix A, incorporated by reference in s. NR 484.04(26m).

ii) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO₂ concentration or the minimum potential O₂ concentration, as applicable, as defined in sections 2.1.5, 2.1.3.1, and 2.1.3.2 of 40 CFR part 75, Appendix A, incorporated by reference in s. NR 484.04(26m).

iii) For a disapproved excepted monitoring system, sorbent trap monitoring system, under 40 CFR 75.15 and disapproved flow monitor, respectively, the maximum potential concentration of mercury and maximum potential flow rate, as defined in sections 2.1.7.1 and 2.1.4.1 of 40 CFR part 75, Appendix A, incorporated by reference in s. NR 484.04(26m).

2) The owner or operator shall submit a notification of certification retest dates and a new certification application in accordance with subd. 3.a. and b.

3) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the department's notice of disapproval, no later than 30 affected unit operating days after the date of issuance of the notice of disapproval.

(d) *Initial certification and recertification procedures for units using the mercury low mass emission excepted methodology under 40 CFR 75.81(b).* The owner or operator of a unit qualified to use the mercury low mass emissions excepted methodology under 40 CFR 75.81(b) shall meet the applicable certification and recertification requirements in 40 CFR 75.81(c) to (f).

(e) *Certification/recertification procedures for alternative monitoring systems.* The owner or operator of each affected unit for which the owner or operator intends to use an alternative monitoring

system approved by the administrator and, if applicable, the department under 40 CFR part 75, Subpart E, shall comply with the applicable notification and application procedures of 40 CFR 75.20(f).

(3) OUT OF CONTROL PERIODS. (a) *Substitution procedure for invalid data.* Whenever any monitoring system fails to meet the quality-assurance and quality-control requirements or data validation requirements of 40 CFR part 75, data shall be substituted using the applicable missing data procedures in 40 CFR part 75, Subpart D.

(b) *Audit decertification.* Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under sub. (2) or the applicable provisions of 40 CFR part 75, both at the time of the initial certification or recertification application submission and at the time of the audit, the department shall issue a notice of disapproval of the certification status of the monitoring system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the department or the administrator. By issuing the notice of disapproval, the department revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system may not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system. The owner or operator shall follow the applicable initial certification or recertification procedures in sub. (2) for each disapproved monitoring system.

(4) NOTIFICATIONS. The owner or operator of an affected unit shall submit written notice to the department and the administrator in accordance with 40 CFR 75.61, except that if the affected unit is not subject to an acid rain emissions limitation, the notification is only required to be sent to the department.

(5) RECORDKEEPING AND REPORTING. (a) *General provisions.* The owner or operator of an affected unit shall comply with all recordkeeping and reporting requirements in this subsection and in 40 CFR 75.84(a) to (f).

(b) *Certification applications.* The owner or operator of an affected unit shall submit an application to the department within 45 days after completing all initial certification or recertification tests required under sub. (2), including the information required under 40 CFR 75.63.

(c) *Quarterly reports.* The owner or operator of an affected unit shall submit quarterly reports, as follows:

1. Report the mercury mass emissions data and heat input data in an electronic quarterly report in a format prescribed by the department, for each calendar quarter beginning with one of the following:

a. For a unit that commences commercial operation before July 1, 2008, the calendar quarter covering January 1, 2009 to March 31, 2009.

b. For a unit that commences commercial operation on or after July 1, 2008, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under sub. (1)(b), unless that quarter is the third or fourth quarter of 2008, in which case reporting shall commence in the quarter covering January 1, 2009 to March 31, 2009.

2. Submit each quarterly report to the department and the administrator department within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in 40 CFR 75.84(f).

3. For affected units that are also subject to an acid rain emissions limitation or the CAIR NO_x annual trading program, CAIR SO₂ trading program or CAIR NO_x ozone season trading program, quarterly reports shall include the applicable data and information required by 40 CFR part 75, Subparts F to H as applicable, in addition to the mercury mass emission data, heat input data, and other information required by this section.

(e) *Compliance certification.* The owner or operator of an affected unit shall submit to the department a compliance certification in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the affected unit's emissions are correctly and fully monitored. The certification shall state all of the following:

1. That the monitoring data submitted were recorded in accordance with the applicable requirements of this section and 40 CFR part 75, including the quality assurance procedures and specifications.

2. That for an affected unit with add-on mercury emission controls, a flue gas desulfurization system, a selective catalytic reduction system, or a compact hybrid particulate collector system and for all hours where mercury data are substituted in accordance with 40 CFR 75.34(a)(1), the mercury add-on

emission controls, flue gas desulfurization system, selective catalytic reduction system, or compact hybrid particulate collector system were operating within the range of parameters listed in the quality assurance/quality control program under 40 CFR part 75, Appendix B, incorporated by reference in s. NR 484.04(26m), or quality-assured SO₂ emission data recorded in accordance with 40 CFR part 75 document that the flue gas desulfurization system, or quality-assured NO_x emission data recorded in accordance with 40 CFR part 75 document that the selective catalytic reduction system, was operating properly, as applicable, and the substitute data values do not systematically underestimate mercury emissions.

(6) PETITIONS. The owner or operator of an affected unit may submit a petition under 40 CFR 75.66 to the administrator requesting approval to apply an alternative to any requirement of subs. (1) to (5) and (7). Application of an alternative to any requirement of subs. (1) to (5) and (7) is in accordance with this section only to the extent that the petition is approved in writing by the administrator, in consultation with the department.

(7) ADDITIONAL REQUIREMENTS TO PROVIDE HEAT INPUT DATA. The owner or operator of an affected unit that monitors and reports mercury mass emissions using a mercury concentration monitoring system and a flow monitoring system shall also monitor and report heat input rate at the unit level using the procedures set forth in 40 CFR part 75.

NR 446.13 Adoption of additional requirements. (1) By June 30, 2010, the department shall adopt rules which require a 90% reduction in mercury emissions from electrical generating units affected by this subchapter by January 1, 2020.

(2) The rules adopted under sub. (1) shall specify that the 90% reduction is determined by comparing the amount of mercury in coal that is combusted to the amount of mercury in emissions from the combustion process.

(3) The 90% mercury reduction requirement in sub. (1) shall be based on the applicable finding and documentation required by s. 285.27(2)(b), Stats.

(4) In developing the rules required by sub. (1), the department shall consider adoption of voluntary incentives that could be incorporated to promote achievement of a 90% reduction in mercury emissions by electrical generating units affected by this subchapter by January 1, 2015.

SECTION 33. NR 446 subch. III(title) is amended to read:

NR 446 subch. III(title)

Subchapter III – Mercury Emission Standards for ~~Mercury~~ Other Sources

SECTION 34. NR 446.14 is amended to read:

NR 446.14 **Mercury emission limits.** No person may cause, allow or permit emissions of mercury:

(1) In quantities greater than ~~2,300 grams~~ 2.3 kg (5.1 lbs) per 24-hour period from mercury cell chlor-alkali plants, or mercury ore processing facilities.

(2) In quantities greater than ~~3,200 grams of mercury~~ 3.2 kg (7.1 lbs) per 24-hour period from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges.

SECTION 35. NR 446.15(3)(a) is amended to read:

NR 446.15(3)(a) Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with par. (b), or demonstrate compliance with par. (d) and assume ventilation emissions of ~~1,300 grams~~ 1.3 kg (2.9 lbs) per day of mercury.

SECTION 36. NR 446.16(1) is amended to read:

NR 446.16(1) All wastewater treatment plant sludge incineration and drying plants for which mercury emissions exceed ~~1600 grams/day~~ 1.6 kg (3.5 lbs) per 24-hour period, demonstrated either by stack sampling or sludge sampling according to s. NR 439.04(4), shall monitor mercury emissions at intervals of at least once per year in accordance with Method 105 or the procedures specified in s. NR 446.04(4)(f). The results of monitoring shall be reported to the department by registered letter dispatched before the close of the next business day following the monitoring. The results shall be retained at the source and shall be made available for inspection by a department representative for a minimum of 2 years.

SECTION 37. NR 484.04(20m) and (26m) are amended to read:

	CFR Appendix Referenced	Title	Incorporated by Reference For
(20m)	40 CFR part 60 Appendix A, Method 29	Determination of Metals Emissions from Stationary Sources	NR 446.09(1)(e)1. NR 462 Table 5
(26m)			
(a)	40 CFR part 75 Appendix A	Specifications and Test Procedures	NR 446.04(3) NR 446.09(1)(a) <u>NR 446.12(2)(c)3.e.</u>
(b)	40 CFR part 75 Appendix B	Quality Assurance and Quality Control Prodedures	NR 446.04(3) NR 446.09(1)(a) <u>NR 446.12(2)(a)2. and (c)2. and (5)(e)2.</u>
(c)	40 CFR part 75 Appendix C	Missing Data Estimation Procedures	NR 446.04(3) NR 446.09(1)(a)
(d)	40 CFR part 75 Appendix F	Conversion Procedures	NR 446.04(3) NR 446.09(1)(a)

SECTION 38. NR 484.10(7) and (47m) are amended to read:

NR 484.10

Standard Number	Standard Title	Incorporated by Reference For
(7) ASTM D388-99e1	Standard Classification of Coals by Rank	40 CFR part 75 Appendix F NR 400.02(40) <u>NR 400.02(92m)</u> <u>NR 400.02(154m)</u>
(47m) ASTM D3684-01	Standard Test Method for Total Mercury in Coal by Oxygen Bomb Combustion/Atomic Absorption Method	NR 446.027(1)(b) NR 446.04(1) NR 446.04(2) NR 446.09(1)(b) NR 446.09(1)(e)2. <u>NR 446.04(1)(b)</u> NR 462, Table 6-

SECTION 39. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 40. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on _____.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By _____
Scott Hassett, Secretary

(SEAL)