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DEPARTMENT OF NATURAL RESOURCES
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WISCONSIN DEPT. OF NATURAL RESOURCES

April 10, 2024

Ms. Debra Shore
Regional Administrator
US Environmental Protection Agency - Region 5 (R19J0)
77 West Jackson Boulevard
Chicago IL 60604-3507

Subject: Wisconsin State Implementation Plan (SIP) Revision – Rule AM-05-21 Revising Nitrogen Compound Emissions Control Requirements in Chapter NR 428

Dear Regional Administrator Shore:

The Wisconsin Department of Natural Resources (WI DNR) is requesting that the US Environmental Protection Agency (EPA) approve into the Wisconsin SIP certain revisions to chs. NR 400, 428, and 484, Wis. Adm. Code, made in Board Order AM-05-21. The final rule was published in the Wisconsin Administrative Register on March 25, 2024, and went into effect on April 1, 2024. Copies of the revised Wisconsin Administrative Code for chapters NR 400, 428, and 484 and the final adopted Board Order AM-05-21 are enclosed.

The rule revisions that the WI DNR is requesting be approved into the Wisconsin SIP:

- Clarify emission limit and monitoring requirements during secondary fuel usage
- Provide a site-specific emission limitation alternative for facilities that demonstrate compliance with s. NR 428.04 and 428.05 emissions limitations is technologically or economically infeasible
- Clarify monitoring requirements for certain emissions sources of nitrogen oxides (NOx), including kilns, furnaces, asphalt plants, and process heating units
- Provide an alternative to the current 180-day waiting period between the time a source submits its compliance monitoring plan and when it commences operation
- Clarify that an emission limitation exception applies only to units constructed before a certain date, as originally intended
- Include definitions and other administrative changes to support the revisions noted above

The WI DNR requests that the SIP be revised to reflect the following revisions to the Wisconsin Administrative Code included in the certified Board Order AM-05-21 and as published in the Wisconsin Administrative Register No. 819B on March 25, 2024:

- Definitions incorporated under ss. NR 400.03(4)(mf) and 428.02 (7i), (7p), (7u), and (7w)
- Secondary fuel usage requirements under s. NR 428.04(2)(i) and (4)(c), 428.05(2)(b) and (f), 428.05(3)(f) and (5)(c), 428.22(1) and (3), and 428.24(1)(c)
- Site-specific emission limitation alternative under s. NR 428.055
- Revision to the compliance monitoring plan waiting period under s. NR 428.07(1)(a)2.
- Clarification of monitoring requirements under s. NR 428.08(2)(e)(title), (f)(title), (g), and (3), and 484.04 Table 2 Row (15m)
- Clarification of emission limitation exception under s. NR 428.21(3)(d)

The NR 428 rule revision SIP submittal meets the completeness requirements of 40 CFR Part 51, Appendix V. The WI DNR has legal authority under s. 285.11(6), Wis. Stats., to develop a SIP for the prevention, abatement, and control of air pollution. Enclosed is a section 110(l) demonstration certifying that the rule revisions being submitted for SIP approval will not interfere with attainment, reasonable further progress, or any other applicable Clean Air Act requirement. Pursuant to the requirements of 40 CFR § 51.102(f), the WI DNR provided opportunity for public comment on the rule revisions being submitted for SIP approval. The notice of the public comment period and public hearing date was published on May 1, 2023. A copy of the public hearing notice and proof of publication is enclosed. The public hearing, held on May 31, 2023, was conducted via video conference and phone. The public comment period concluded on June 7, 2023. A summary of the public comments received and WI DNR's responses to the comments are enclosed in the "Green Sheet Adoption Package of Board Order AM-05-21" submitted to the Wisconsin Natural Resources Board.

This SIP is being submitted using the EPA's electronic SIP submission system (SPeCS). Please contact Olivia Salmon at olivia.salmon@wisconsin.gov if you have any questions.

Sincerely,

DocuSigned by:
Gail E. Good
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4/9/2024 | 4:24 PM CDT

Gail E. Good
Director, Air Management
Wisconsin Department of Natural Resources

cc: Sarah Arra, EPA – Region 5
Chris Panos, EPA – Region 5
Ron Binzley, AM/7
Brianna Denk, AM/7
Olivia Salmon, AM/7
Phil Bower, LS/8

Enclosures:

1. Final Certified Rule (Board Order AM-05-21)
2. Final rule chapters NR 400, 428, and 484 published in Wisconsin Administrative Register No. 819B
3. Section 110(l) Non-Interference Demonstration
4. Green Sheet Adoption Package of Board Order AM-05-21 (September 27, 2023, Natural Resources Board Meeting)
5. May 31, 2023, public hearing notice
6. Proof of public hearing notice publication in Wisconsin Administrative Register No. 809A1

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2/12/2024 | 9:35 AM CST

STATE OF WISCONSIN)
) ss
DEPARTMENT OF NATURAL RESOURCES)

TO ALL WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Steven Little, Deputy Secretary of the Department of Natural Resources and custodian of the official records, do hereby certify that the annexed copy of Natural Resources Board Order No. AM-05-21, Clearinghouse Number CR 23-017, has been compared by me with the original order on file in this office of the Department of Natural Resources, Madison, Wisconsin and that the same are true copy, thereof, and of the whole of such original order: that said order was duly passed and published as set forth therein.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department of Natural Resources at the Natural Resources State Office Building in the City of Madison,

this_____ day of 2/12/2024 | 9:35 AM CST, 2024

DocuSigned by:
7A5DFE3497144B5...
Steven Little, Deputy Secretary

The statement of scope for this rule, SS 064-21 was approved by the Governor on July 16, 2021, published in Register No. 787B on July 26, 2021, and approved by the Natural Resources Board on December 8, 2021. This rule was approved by the Governor on October 5, 2023.

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

The Wisconsin Natural Resources Board adopts an order to **amend** NR 428.04 (2) (g) 1. d., 428.05 (2) (b), 428.07 (1) (a) 2., 428.22 (1) (intro.), and 484.04 Table 2 Row (15m); to **repeal and recreate** NR 428.08 (2) (e) (title),; and to **create** NR 400.03 (4) (mf), 428.02 (7i), (7p), (7u), and (7w), 428.04 (2) (i) and (4) (c), 428.05 (2) (f), (3) (f), and (5) (c), 428.055, 428.08 (2) (f) (title), (g), and (3), 428.21 (3) (d), 428.22 (3) and 428.24 (1) (c), relating to nitrogen compound emissions regulations.

AM-05-21

Analysis Prepared by the Department of Natural Resources

1. Statute Interpreted: The State Implementation Plan developed under s. 285.11 (6), Wis. Stats., is revised.

2. Statutory Authority: Sections 227.11(2)(a), 285.11(1) and (6), Wis. Stats.

3. Explanation of Agency Authority: Section 227.11(2)(a), Wis. Stats., expressly confers rulemaking authority to an agency where such rules are necessary to effectuate the purpose of existing statutory authority. The department is required under s. 285.11(1), Wis. Stats., to promulgate and implement air pollution control rules consistent with ch. 285, Wis. Stats. In addition, s. 285.11(6), Wis. Stats., requires the department to prepare and develop comprehensive state implementation plans (SIPs) for prevention, control and abatement of air pollution and revise and implement those plans to conform with the Clean Air Act (CAA).

Several provisions of the CAA provide the federal statutory basis for this rule. Sections 172(c)(2) and 182(b)(1) of the CAA require the state to provide Reasonable Further Progress (RFP) plans for ozone nonattainment areas. Section 182(f) of the CAA requires Reasonably Available Control Technology (RACT) requirements for nitrogen oxides (NOx) to be included in the SIP for Moderate (and more stringent nonattainment classifications) ozone nonattainment areas.

4. Related Statutes or Rules: The proposed rule changes revise and clarify NOx control requirements contained in ch. NR 428, Wis. Adm. Code. A definition for a common abbreviation is added to ch. NR 400, Wis. Adm. Code. Proposed cross-reference updates in ch. NR 484, Wis. Adm. Code, align the chapter with the proposed revisions in ch. NR 428, Wis. Adm. Code.

5. Plain Language Analysis: NOx reacts with volatile organic compounds in the presence of sunlight to form ground-level ozone. Concentrations of ozone above the National Ambient Air Quality Standards (NAAQS) adversely impact human health and the environment. The U.S. Environmental Protection Agency (EPA) has designated several areas along the Lake Michigan shoreline in eastern Wisconsin as "nonattainment areas" due to ozone concentrations violating the NAAQS. Certain emissions sources located in nonattainment areas are subject to more stringent controls under the CAA.

Chapter NR 428, Wis. Adm. Code, regulates the emissions of NOx from certain stationary sources located in current ozone nonattainment areas and areas with a history of ozone nonattainment, including the counties of Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and

Waukesha. Subchapters I through III were added in January 2001 to fulfill the Rate of Progress/Reasonable Further Progress plans as required by Sections 172(c)(2) and 182(b)(1) of the CAA. Subchapter IV of this rule was added in July 2007 to include CAA Section 182(f) Reasonably Available Control Technology (RACT) requirements for major sources of NOx located in ozone nonattainment areas classified as Moderate (or more stringent nonattainment classifications).

Since the promulgation of the 2001 and 2007 revisions to ch. NR 428, Wis. Adm. Code, the department has identified several implementation issues associated with certain parts of the chapter. The department is proposing revisions to the chapter to ensure clear and consistent implementation of this rule. The proposed changes include clarifying exemption applicability, emission limits for units using more than one type of fuel, and emissions averaging requirements. The proposed rule also revises and clarifies existing compliance and monitoring requirements, corrects an emission limit for a specific type of unit, incorporates procedures for approving a source-specific emission limit alternative to ensure that limits are achievable in practice, and updates cross references. The specific proposed rule changes are described below:

Revised NOx emission limit

The department is proposing to correct the emission limit under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, for combined cycle combustion turbines with maximum design power output of 25 MWe or greater because, as written, the existing limit is not achievable in practice at all times of operation (e.g., during periods of startup or shutdown). The proposed change revises the NO_X emission limit from 3 parts per million, dry volume (ppmdv), corrected to 15% oxygen on a 30-day rolling average basis to 9 ppmdv, corrected to 15% oxygen on a 30-day rolling average basis. Because the proposed emission limit is reflective of current operations, including periods of startup and shutdown, the proposed rule change is not expected to result in an increase in actual emissions. Additionally, the proposed revision aligns the NOx emission limit adopted under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, to fulfill the Rate of Progress/Reasonable Further Progress plan requirement under CAA Sections 172(c)(2) and 182(b)(1) with the NOx emission limit for the same type of unit that was adopted under s. NR 428.22(1)(h)1., Wis. Adm. Code, to meet CAA Section 182(f) NOx RACT requirements. This proposed revision will reduce confusion in scenarios when an emissions unit is subject to both emissions limits simultaneously.

Proposed language under s. NR 428.055, Wis. Adm. Code, provides procedures allowing facilities to demonstrate that an emission limit listed in s. NR 428.04, Wis. Adm. Code, is technologically or economically infeasible and the opportunity to request a site-specific emission limit alternative. Emission limits set under this proposed provision must be approved by the department and approved into the Wisconsin SIP by EPA.

Clarify NOx emission limits during secondary fuel useage

The department is proposing to clarify emission limits and monitoring requirements under ss. NR 428.04, 428.05, 428.22, and 428.24, Wis. Adm. Code, that apply when a facility uses more than one type of fuel. The proposed revisions clarify the department's practice that a unit firing secondary fuel is not subject to emission limits and monitoring requirements when utilizing only the secondary fuel under certain circumstances. Applicable instances of secondary fuel use include:

- When the emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the corresponding applicability thresholds.
- When the emissions unit burns the secondary fuel only: during periods of curtailment or supply interruption of other fuel(s) not to exceed 500 hours in a 12 consecutive month time period; or periodic testing, maintenance, or operator training.
- When the emissions unit utilizes the secondary fuel only for startup or the fuel constitutes less than 1% of the unit's fuel consumption within a 12 consecutive month time period.

Clarify monitoring requirements for specific categories of emissions units

Proposed language under s. NR 428.08(2), Wis. Adm. Code, incorporates an alternative to operating a continuous emissions monitoring system (CEMS) by meeting operational and performance testing requirements for: kilns, furnaces, asphalt plants, process heating units, engines, and other units. Currently there are no monitoring requirements specified for these types of units under s. NR 428.08(2), Wis. Adm. Code.

Revise compliance monitoring plan submittal deadline

The department is proposing to revise the deadline for compliance monitoring plan submittals under s. NR 428.07(1)(a)2., Wis. Adm. Code, from "at least 180 days prior to initial operation" to "at least 180 days prior to initial operation, or an alternative date less than 180 days approved by the department." The previous rule language required plans to be submitted 180 days before initial operation. This means a source would have been required to wait for the 180-day period to end prior to operating, even if the source was permitted and physically capable of operation prior to that date. The revised rule language allows the source to request an alternative date to avoid the waiting period if necessary.

Clarify exception

The department is proposing to clarify that the unit exception under s. NR 428.21(3), Wis. Adm. Code, applies only to units constructed before August 1, 2007, as originally intended.

Definitions

The department is proposing to incorporate definitions related to secondary fuel usage scenarios and specific types of emissions units under s. NR 428.02, Wis. Adm. Code.

Cross references

The department is proposing to update cross references through ch. NR 428, Wis. Adm. Code, to be consistent with the proposed rule language.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations: Sections 172(c)(2) and 182(b)(1) of the federal CAA require states with a Moderate (or a more stringent nonattainment classification) ozone nonattainment area to develop and implement "Reasonable Further Progress" plans to help the area reach attainment. Subchapters I through III of ch. NR 428, Wis. Adm. Code, were promulgated as part of Wisconsin's Reasonable Further Progress demonstration to reduce NOx emissions in the state's ozone nonattainment areas. Section 182(f) of the CAA requires states to implement Reasonably Available Control Technology (RACT) requirements for large sources of NOx emissions as defined by the CAA in Moderate (and more stringent nonattainment classifications) ozone nonattainment areas. Subchapter IV of ch. NR 428, Wis. Adm. Code, was promulgated to meet NOx RACT requirements for areas classified as Moderate nonattainment under the 1997 ozone NAAQS. The proposed rule changes are intended to clarify ambiguities in ch. NR 428, Wis. Adm. Code, and ensure implementation of this rule is consistent with CAA requirements.

7. If Held, Summary of Comments Received During Preliminary Comment Period and at Public Hearing on the Statement of Scope: The department held an online preliminary public hearing on the statement of scope on November 5, 2021. Nine members of the public attended the hearing. Two attendees registered in support of the proposed scope statement; one of these members provided a verbal comment reiterating their support. No other verbal comments were provided.

The public comment period ended on November 5, 2021. The department received no written comments on the proposed statement of scope.

8. Comparison with Similar Rules in Adjacent States: Wisconsin's NOx emission limits in ch. NR 428, Wis. Adm. Code, were compared to similar rules in the adjacent states of Michigan, Illinois, Iowa and Minnesota, as well as Indiana. Portions of Wisconsin, Illinois, and Indiana comprise a tri-state area currently designated by EPA as nonattainment for the 2015 ozone NAAQS. This same tri-state area was previously designated as nonattainment for the 2008 ozone NAAQS until being redesignated to attainment in 2022. As such, the three states are federally required to limit emissions of ozone precursors, including NOx (e.g., CAA Section 182(f) NOx RACT requirements).

Unlike Wisconsin, Illinois's and Indiana's administrative rules limiting NOx emissions have not been approved by EPA as meeting CAA Section 182(f) NOx RACT requirements. Illinois has promulgated administrative rules limiting NOx emissions under Title 35 Part 217 of the Illinois Administrative Code. Overall, ch. NR 428, Wis. Adm. Code, establishes NOx emission limits based on emissions unit size and fuel type while the Illinois rules generally set NOx emission limits for broad categories of units (e.g., one emission limit for all solid fuel boilers above a certain maximum heat input). As a result, ch. NR 428, Wis. Adm. Code, sets many more emission limits relative to Illinois. For categories of emissions units that are directly comparable, the limits in ch. NR 428, Wis. Adm. Code, are similar to or slightly more stringent than the NOx emission limits in Illinois. Indiana has promulgated NOx emission limits under Title 326 Article 10 of the Indiana Administrative Code only for certain types of cement kilns and for a specific energy utility company.

Michigan's NOx emissions limits are incorporated under Michigan Administrative Rules 336.1801-336.1834 and are similar to the NOx rules promulgated by Illinois in that emission limits are set for broad emissions unit categories and are similar to or slightly less stringent than Wisconsin's rules (when direct comparison is possible). Michigan, however, only became subject to CAA Section 182(f) NOx RACT requirements in November 2022, whereas Illinois, Indiana, and Wisconsin became subject to NOx RACT requirements in 2004.

Minnesota and Iowa do not have ozone nonattainment areas classified Moderate, and as such, are not required to implement Reasonable Further Progress and NOx RACT requirements under the Clean Air Act like those in ch. NR 428, Wis. Adm. Code.

9. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen: The proposed rule changes address known implementation issues with ch. NR 428, Wis. Adm. Code, rule language promulgated in 2001 and 2007. With the exception of one revised emission limit which is being proposed because the existing limit is not achievable in practice, this rulemaking primarily clarifies and streamlines the rule chapter.

The department is proposing to revise the NO_X emission limit for gaseous fuel-fired, combined cycle combustion turbines with maximum design power output of 25 MWe or greater under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, because the current limit is not achievable in practice at all times of operation by combined cycle turbines in this category (e.g., during startup and shutdown). The proposed modification would change the NO_X emission limit from 3 ppmdv corrected to 15% oxygen on a 30-day rolling average basis to 9 ppmdv, corrected to 15% oxygen on a 30-day rolling average basis. This change would align the NOx emission limit under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, which was promulgated in 2001, with the NOx emission limit incorporated in 2007 under s. NR 428.22(1)(h)1., Wis. Adm. Code, and approved by EPA as RACT, for the same type of unit.

The technical basis for the NOx RACT limits set in subchapter IV of ch. NR 428, Wis. Adm. Code, were described in detail in Attachment A of the green sheet adoption package for Board Order AM-17-05 (https://p.widencdn.net/zplhxb/04-07-3A1). The NOx RACT limits promulgated under Board Order AM-

17-05/Clearinghouse Rule 07-016 were based on the department's review of available control technologies and their cost-effectiveness in dollars per ton of controlled NOx. The department's evaluation followed the methods established in EPA's Alternative Control Technology documents for NOx source categories (https://www3.epa.gov/airquality/ctg_act/).

The NOx emissions limits under s. NR 428.04, Wis. Adm. Code, were promulgated in 2001. At that time, state and federal regulations set emissions limits under the assumption that emissions during periods of startup and shutdown would be excluded. After a court decision found this practice to be inconsistent with the CAA (*Sierra Club v. Johnson*, 551 F.3d 1019 (D.C. Cir. 2008)), regulators began specifying that emission limits apply at all times of operation. The department is proposing to change the emission limit under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, from 3 ppmdv to 9 ppmdv at 15% oxygen for combined cycle combustion turbines with maximum design power output of 25 MWe or greater because it has found that the 3 ppmdv limit is not achievable in practice at all times of operation (e.g., during periods of startup and shutdown). Because the proposed emission limit is reflective of current operations, the proposed rule change is not expected to result in an increase in actual emissions.

10. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report: The only proposed change which may economically impact businesses is the incorporation of s. NR 428.08(2)(g), Wis. Adm. Code. The proposed language clarifies monitoring requirements for kilns, furnaces, asphalt plants, process heating units, engines, and other units. Currently there are no monitoring requirements explicitly defined for these types of units under s. NR 428.08(2), Wis. Adm. Code, leading some to potentially conclude that either no compliance methods are required for these units or that continuous emissions monitoring systems (CEMS) are the only approvable compliance method for these units. This is an oversight from previous rulemakings. The proposed changes will improve clarity for businesses by ensuring that applicable monitoring requirements are clearly defined. Additionally, the proposed changes may reduce emissions of NOx to the environment by ensuring the department is able to enforce NOx emission limits by way of requiring emissions monitoring at all applicable units. The proposed remedy under s. NR 428.08(2)(g), Wis. Adm. Code, offers facilities the flexibility to either operate a CEMS or meet specific operational and performance testing requirements. The department estimates that the potential annual cost of the rulemaking is $109,200 based on assumptions made as part of its analysis. The department's analysis is described below.

The department estimates that 21 units may be subject to s. NR 428.08(2)(g), Wis. Adm. Code. The number of potentially affected units was determined by conducting a search of facilities with kilns, furnaces, asphalt plants, process heating units, or engine units and whose permits reference the sections of ch. NR 428, Wis. Adm. Code, that could make them subject to s. NR 428.08(2)(g), Wis. Adm. Code (i.e., ss. NR 428.04, 428.05, and 428.20, Wis. Adm. Code).

Based on cost estimates gathered from CEMS manufacturers, initial costs for the purchase of a NOx CEMS, installation, and training are $53,500 to $150,000, depending on the system and facility, or $101,750 on average. Annualized costs to maintain a NOx CEMS are approximately $7,500 to $15,000 ($11,250 on average). The total annualized cost for the 21 potentially affected emissions units to comply with s. NR 428.08(2)(g), Wis. Adm. Code, over a 10-year period by operating a CEMS is $449,925. Because CEMS are relatively expensive to operate and maintain, the department's proposed rule language also provides a more economical alternative to operating a CEMS in order to meet the requirements of s. NR 428.08(2)(g), Wis. Adm. Code.

Instead of operating a CEMS to comply with s. NR 428.08(2)(g), Wis. Adm. Code, facilities are given the flexibility to alternatively meet specific operational and performance testing requirements. The latter

would require sources to meet a testing requirement every two years. The department estimates that the annualized cost of the biennial performance tests is $3,500 to $5,700, or $4,600 on average, for each affected emissions unit based on cost information gathered from companies that offer stack testing services. A small percentage of the identified 21 emissions units may have an initial one-time cost if the unit needs to be modified to allow for tests to be conducted. The cost of modification is expected to vary widely depending on unit material type (e.g., if the unit is designed to withstand extreme temperatures), unit location (e.g., if scaffolding or a lift is required), and mechanical modification (e.g., installation of sampling ports). The department estimates this potential one-time modification expense could be $2,000 to $10,000 ($6,000 average), and notes that outliers could exist. To be conservative, the department assumed all 21 units would have a $6,000 one-time modification cost to accommodate stack testing. The department expects that in reality, only a few emissions units may incur an initial modification cost. The total annualized cost, including the potential initial modification costs and biennial performance test costs, over a 10-year period to comply with the operational and performance testing option in s. NR 428.08(2)(g), Wis. Adm. Code, is $109,200.

In estimating the cost associated with this revision, the department assumes a facility would opt for the less expensive performance testing approach to meet the proposed s. NR 428.08(2)(g), Wis. Adm. Code, requirements because the testing approach is approximately a quarter of the cost of operating a CEMS. The department also notes that the $109,200 is likely overestimated due to four factors. First, the number of affected emissions units is likely overestimated because some of the 21 identified emissions units may not be subject to the compliance requirements, based on the rule's emissions unit capacity thresholds. Second, the department expects that some sources would only be required to conduct tests every four years, instead of the standard two-year testing schedule, because some emissions units will meet the exception under s. NR 428.08(3)(a)1.b., Wis. Adm. Code. The department is not able to estimate how many units may be eligible for this exception as it is dependent on future emissions tests. Third, the department's analysis assumes none of the 21 emissions units are currently operating a CEMS, which could also be used to comply with s. NR 428.08(2)(g), Wis. Adm. Code. Fourth, some facilities may request and receive approval to use an alternative monitoring approach.

The department does not expect any other changes proposed as part of this rulemaking to have an economic impact on businesses. While the creation of additional exemption criteria in s. NR 428.21(3)(d), Wis. Adm. Code, is necessary to ensure NOx RACT requirements are appropriately applied, the department is not aware of any facility currently exempt, that would no longer be exempt after finalization of this proposed change. Additionally, the proposed NOx emission limit revision under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, will not result in an economic impact because the revised limit is equivalent to the NOx RACT emission limit under s. NR 428.22(1)(h)1., Wis. Adm. Code, for the same type of unit.

11. Effect on Small Business (initial regulatory flexibility analysis): Chapter NR 428, Wis. Adm. Code, primarily applies to facilities with high NOx emissions, and those facilities in Wisconsin have tended to not meet the definition of small business. The proposed revisions are intended to clarify existing requirements and to ensure clear and consistent implementation of ch. NR 428, Wis. Adm. Code. The proposed changes to ch. NR 428, Wis. Adm. Code, will not result in any existing facility, small business or otherwise, becoming newly subject to NOx emissions regulations upon promulgation of this rule.

12. Agency Contact Person: Olivia Salmon, Department of Natural Resources, P.O. Box 7921, Madison, WI 53707-7921; Olivia.Salmon@wisconsin.gov; (608) 630-5264

13. Place where comments are to be submitted and deadline for submission:
A public comment period occurred from May 1 through June 7, 2023, and a public hearing was held on May 31, 2023.

RULE TEXT

SECTION 1. NR 400.03 (4) (mf) is created to read:

NR 400.03 (4) (mf) "SIP" – state implementation plan

SECTION 2. NR 428.02 (7i), (7p), (7u) and (7w) are created to read:

NR 428.02 (7i) "Primary fuel" means the fuel types that provide the greatest amount of heat input, in terms of mmBtu, to a combustion unit. A combustion unit may have more than one primary fuel.

(7p) "Secondary fuel" means any fuel that is not a primary fuel.

(7u) "Simple cycle stationary combustion turbine" means any stationary combustion turbine that does not recover heat from the stationary combustion turbine exhaust gases.

(7w) (a) "Supply interruption" or "curtailment" means a period of time during which the supply of primary fuel to an emissions unit is reduced for reasons beyond the control of the facility.

(b) "Supply interruption" or "curtailment" may not result from an increase in the cost or unit price of the primary fuel.

SECTION 3. NR 428.04 (2) (g) 1. d. is amended to read:

NR 428.04 (2) (g) 1. d. ~~3~~ 9 parts per million dry volume (ppmdv), corrected to ~~15%~~ 15 percent oxygen, on a 30-day rolling average basis for a combined cycle combustion turbine with a maximum design power output of 25 MWe or greater.

SECTION 4. NR 428.04 (2) (i) and (4) (c) are created to read:

NR 428.04 (2) (i) *Emissions units using secondary fuel.* An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(4) (c) The owner or operator claiming exemption from the requirements under sub. (2) pursuant to sub. (2) (i) shall keep a record of all of the following:

1. Each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

2. The reason for each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

3. The monthly and yearly total hours for each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

4. Other relevant information as required by the department.

SECTION 5. NR 428.05 (2) (b) is amended to read:

NR 428.05 (2) (b) Except as provided ~~in~~ under par. (a)~~or,~~ (c), or (f) the following categories of NOx emissions units listed ~~in~~ under this subsection shall complete a combustion optimization to minimize NOx emissions in accordance with s. NR 439.096 by December 31, 2002~~.~~:

SECTION 6. NR 428.05 (2) (f), (3) (f) and (5) (c) are created to read:

NR 428.05 (2) (f) An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(3) (f) *Emissions units using secondary fuel.* An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(5) (c) The owner or operator claiming exemption to the requirements under subs. (2) and (3) pursuant to subs. (2) (f) and (3) (f) shall keep a record of all of the following:

1. Each occurrence when the fuel denoted under subs. (2) (f) and (3) (f) was burned.

2. The reason for each occurrence when fuel denoted under subs. (2) (f) and (3) (f) was burned.

3. The monthly and yearly total hours of operation for each fuel used as specified under subs. (2) (f) and (3) (f).

4. Other relevant information as required by the department.

SECTION 7. NR 428.055 is created to read:

NR 428.055 Alternatives.

(1) ALTERNATIVE AUTHORITY**.** The owner or operator of a NOx emissions source may submit a request to the department requesting approval to establish an alternative site-specific emission limitation to one or more of the requirements under s. NR 428.04 or 428.05. The owner or operator shall demonstrate that compliance with requirements under s. NR 428.04 or 428.05 are technologically or economically infeasible. Application for an alternative to any emission limitation under this subchapter does not become effective until approved by the department and the administrator as a site-specific SIP revision and shall be subject to requirements under subs. (2) to (5).

(2) ALTERNATIVE CRITERIA. The department may not approve an alternative site-specific emission limitation under sub. (1) unless:

(a) The alternative will not delay attainment or prevent maintenance of any ambient air quality standard, as determined by methods acceptable to the department.

(b) The owner or operator of the air contaminant source for which an alternative is requested demonstrates that all other direct or portable sources that it owns or operates in the state are in compliance with all applicable requirements under chs. NR 400 to 499 or are on a schedule for compliance with the requirements.

(c) The owner or operator submits to the department information concerning the conditions or special circumstances that demonstrate, to the department's satisfaction, that the applicable requirements from which variance is sought are technologically or economically infeasible. In addition, all of the following conditions are applicable:

1. The owner or operator shall submit proposed emission limitations to the department in writing.

2. The responsible official shall sign the request for alternatives on behalf of the owner or operator.

3. The owner or operator shall submit other relevant information as required by the department.

(3) PROCEDURES FOR ISSUANCE OF ALTERNATIVES. The department, in acting upon any request for an alternative site-specific emission limitation under this section, shall do all of the following:

(a) Act on requests for alternatives within 3 months of the filing of a completed request.

(b) Offer, through public notice, the opportunity for public comments including, where requested, a public hearing.

(c) State in writing the reasons for denying, granting, or for granting in modified form any request.

(4) REVOCATION AND MODIFICATION OF ALTERNATIVES. The department may, after notice and opportunity for hearing, revoke or modify any alternative site-specific emission limitation when any of the following occurs:

(a) Any term or condition of the alternative has been violated.

(b) Changes in ambient air quality indicate that the source has a significant adverse impact as

determined by methods acceptable to the department on the attainment or maintenance of any ambient air quality standard.

(c) The owner or operator did not act in good faith in demonstrating the technological or economic infeasibility of compliance with the limitations or in submitting other relevant information in support of the alternative request.

(5) EFFECTIVE DATE OF ALTERNATIVES. When the department grants, modifies, or revokes a site-specific alternative to a limitation that has been approved by the administrator as part of the SIP, the alternative will not become effective until all of the following conditions have been met:

(a) The department has submitted the alternative to the administrator pursuant to applicable law, including 42 USC 7410 and 40 CFR parts 51 and 52, and all such requirements have been met.

(b) The alternative has been approved by the administrator as a site-specific SIP revision.

SECTION 8. NR 428.07 (1) (a) 2. is amended to read:

NR 428.07 (**1**) (a) 2. For an emissions unit subject to emission limitations ~~in~~ under s. NR 428.04 (2), at least 180 days prior to initial operation, or an alternative date approved by the department.

SECTION 9. NR 428.08 (2) (e) (title) is repealed and recreated to read:

NR 428.08 (**2**) (e) (title) *Boilers or turbines*.

SECTION 10. NR 428.08 (2) (f) (title), (g), and (3) are created to read:

NR 428.08 (2) (f) (title) *Continuous emissions monitoring.*

(g) *Testing*. An owner or operator of an emissions unit not listed under pars. (a) to (e) shall either install and operate a continuous NOx emissions monitoring system according to the requirements under 40 CFR part 75, or do all of the following to satisfy the requirements under this subsection:

1. Keep and maintain the emissions unit manufacturer's specifications and emissions factor information for the emissions unit on-site and available for review.

2. Comply with any applicable standards under sections 111 or 112 of the Clean Air Act (42 USC 7411 or 7412).

3. Maintain the emissions unit in accordance with the manufacturer's operation and maintenance instructions.

4. Conduct an initial performance test within 180 days after initial operation and subsequent performance tests every 2 years thereafter, within 90 days of the anniversary date of the initial performance test, according to all of the following requirements, as applicable, to determine the emissions unit's NOx emissions rate for each fuel fired in the emissions unit:

a. The emissions performance test shall be conducted according to one of the following methods as applicable: Method 7, 7A, 7B, 7C, 7D, or 7E under 40 CFR part 60, Appendix A, incorporated by reference under s. NR 484.04 (15m) Table 2, or another method approved by the department in advance.

b. The initial emissions performance test shall include a determination of the capacity load point of the emissions unit's maximum NOx emissions rate based on one 30 minute test run at each capacity load point for which the unit is operated, other than for startup and shutdown, in the load ranges of 25 to 50 percent, 50 to 75 percent, and 75 to 100 percent, or other load ranges approved by or required by the department in advance.

c. The emissions performance test shall determine compliance based on the average of three test runs that are at least 60 minutes performed at the capacity load determined to have the maximum NOx emission rate under subd. 4. b.

d. An additional performance test shall be conducted according to subd. 4. b. within 90 days of completing a physical change in, or change in the method of operation that causes an increase of the hourly potential to emit of the NOx emissions rate.

e. A performance test is not required for a fuel used only for startup or for a fuel constituting less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent12 consecutive month time period.

(3) EXCEPTIONS. (a) In lieu of the exceptions under s. NR 439.075 (4), all of the following exceptions apply to the testing required under sub. (2) (g):

1. The department may grant a written waiver of a scheduled test if any of the following apply:

a. The direct stationary source associated with the emissions point subject to the testing requirement will be ceasing operation within one year of a scheduled test.

b. The most recently completed results from a test conducted according to the methods and procedures specified under s. NR 439.07 for the direct stationary source demonstrate that the emissions of the air contaminant for which compliance emissions testing is required under this section are 50 percent or less of the applicable emission limitation. If a waiver from a test is granted, the owner or operator shall then conduct the next test according to the schedule under sub. (2) (g) 4.

c. The direct stationary source associated with the emissions point subject to the testing requirement has not operated more than 360 hours in the 12-month period prior to the scheduled test date.

d. The most recently completed test, conducted according to the methods and procedures specified under s. NR 439.07, was conducted less than 12 months prior to the date that testing would be required under par. (b).

e. For each fuel used, the emissions unit is certified to meet emissions standards under 40 CFR part 60 that are equal to or more restrictive than the applicable emission limitation under s. NR 428.04 or 428.05, and the emissions unit is installed and configured according to the manufacturer's specifications.

f. The emissions unit is operated only to restart electric generation in the event of a complete loss of facility power.

g. The emissions unit is operated no more than 500 hours per year and no more than 200 hours during the ozone season, and its only purpose is to provide electricity to a facility if normal electricity service is interrupted or to replace normal critical operations at a facility.

h. The emissions unit's only function is to pump water in the case of a fire emergency.

i. The emissions unit utilization is less than 10 percent of its capacity factor on an annual average basis over a 3-year rolling period and less than 20 percent of its capacity factor in any year of the 3-year rolling period and that is owned or operated by an electric generation utility or gas transmission utility.

j. The emissions unit is a research or development unit.

k. The emissions unit is an engine testing operation or process line.

L. The emissions unit is a gaseous fuel fired unit used to control VOC emissions from a commercial or industrial process.

2. The department may grant an extension of up to 180 days for compliance emissions testing if the owner or operator of a direct stationary source requests an extension, in writing, and can demonstrate that a representative emissions test cannot be performed within the time frame specified under sub. (2) (g) 4.

(b) The owner or operator shall submit a request for a waiver or extension under par. (a) 1. in writing for department review and approval at least 60 days prior to the required test date.

SECTION 11. NR 428.21 (3) (d) is created to read:

NR 428.21 (3) (d) The emissions unit was constructed prior to August 1, 2007.

SECTION 12. NR 428.22 (1) (intro.) is amended to read:

NR 428.22 (1) EMISSIONS LIMITS. Except as provided ~~in sub.~~ under subs. (2) and (3), on or after May 1, 2009, no person may cause, allow, or permit NO_X to be emitted in excess of the following emission limitations on a 30-day rolling average basis:

SECTION 13. NR 428.22 (3) is created to read:

NR 428.22 (3) EMISSIONS UNITS USING SECONDARY FUEL. An emissions unit that is capable of firing secondary fuel is not subject to the requirements under sub. (1) or (2) when utilizing only a secondary fuel if any of the following apply:

(a) The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under sub. (1) or (2).

(b) The emissions unit burns the secondary fuel only during any of the following periods:

1. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this subsection may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

2. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

(c) The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

SECTION 14. NR 428.24 (1) (c) is created to read:

NR 428.24 (1) (c) *Secondary fuel usage recordkeeping.* The owner or operator claiming exemption from the requirements under s. NR 428.22 pursuant to s. NR 428.22 (3) shall keep a record of all of the following:

1. Each occurrence when the fuel denoted under s. NR 428.22 (3) was burned.

2. The reason for each occurrence when the fuel denoted under s. NR 428.22 (3) was burned.

3. The monthly and yearly total hours of operation for each fuel used as specified under s. NR 428.22 (3).

4. Other relevant information as required by the department.

SECTION 15. NR 484.04 Table 2 Row (15m) is amended to read:

Table 2
CFR Appendix References

	CFR Appendix Referenced	Title	Incorporated by Reference For
(15m)	40 CFR part 60 Appendix A, Method 7, 7A, 7B, 7C, 7D and 7E	Determination of nitrogen oxide emissions from stationary sources	NR 428.23 (1) (b) 3. a. NR 428.08 (2) (g) 4. a.

SECTION 16. EFFECTIVE DATE. This rule takes 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 17. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on September 27, 2023.

Dated at Madison, Wisconsin 2/12/2024 | 9:35 AM CST.

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

BY 

Steven Little, Deputy Secretary

Chapter NR 400

AIR POLLUTION CONTROL DEFINITIONS

Note: Chapter 285, Stats., directs the department of natural resources to organize a comprehensive program to enhance the quality, management and protection of the state's air resources. Chapters NR 400 to 499 are the central part of that program. Chapter 285, Stats., also addresses the role of county government in establishing local air pollution control programs in cooperation with the department.

The objectives of these rules are to maintain standards of air quality at a level which will provide adequate protection to public health and welfare, and prevent detrimental effects on property and our environment.

Nothing in chs. NR 400 to 499 or in ch. 285, Stats., prohibits a county or local jurisdiction from adopting more restrictive ordinances where local conditions indicate their need. Chapters NR 400 to 499, all or in part, may be adopted by reference by a county or municipality.

It is the department's policy to seek reasonable uniformity among local air pollution control ordinances in order to make the statewide comprehensive program more effective and less complicated for all persons concerned.

Chapters NR 400 to 499 are subject to periodic revision to reflect changing state and federal mandates, advancing control technology, increasing knowledge of the effect on human health of sub−acute long term exposure to air pollutants, and increased knowledge of the effect of pollutants on plant life, animal life, soils and water resources.

NR 400.01 Applicability; purpose.

(1) APPLICABILITY. This chapter applies to terms, units and abbreviations used in chs. NR 400 to 499. In addition to the definitions in this chapter, other definitions may be included in individual chapters or sections in chs. NR 401 to 499 which are applicable to terms, units or abbreviations used in those respective chapters or sections. If an individual chapter or section defines a term which is also defined in this chapter, the definition contained in the individual chapter or section shall apply within that chapter or section, rather than the definition in this chapter.

(2) PURPOSE. This chapter is adopted under ss. 285.11 and 285.13, Stats., to establish a set of definitions for terms commonly used throughout chs. NR 400 to 499. Individual chapters or sections in chs. NR 401 to 499 may contain additional definitions for terms unique to an individual chapter or section or to a specified series of chapters.

History: Cr. Register, September, 1986, No. 369, eff. 10−1−86; am. Register, February, 1990, No. 410, eff. 3−1−90; am. (1), Register, April, 1995, No. 472, eff. 5−1−95; correction in (2) made under s. 13.93 (2m) (b) 7., Stats., Register, 1996, No. 492; am. (1) and (2), Register, March, 1997, No. 495, eff. 4−1−97.

NR 400.02 Definitions.

Except when another definition is specifically made applicable, in chs. NR 401 to 499:

(1) "Acid rain allowance" or "allowance" means an authorization by the administrator under the acid rain program to emit up to one ton of sulfur dioxide during or after a specified calendar year.

(2) "Acid rain phase I affected unit" means any unit listed in Table A of 42 USC 7651c. These are:

(a) Wisconsin Power and Light — Edgewater generating station unit 4.

(b) Dairyland Power Cooperative — Genoa generating station unit 3.

(c) Wisconsin Power and Light — Nelson Dewey generating station units 1 and 2.

(d) Wisconsin Electric Power Company — North Oak Creek generating station units 1, 2, 3 and 4 and South Oak Creek generating station units 5, 6, 7 and 8.

(e) Wisconsin Public Service Corporation — Pulliam generating station unit 8.

(3) "Acid rain program" means the national sulfur dioxide and nitrogen oxides air pollution control and emissions reduction program established in accordance with title IV of the Act (42 USC 7651 to 7651o) and 40 CFR parts 72 to 78.

(4) "Acid rain provision" means any provision of an operation permit implementing an applicable requirement of the acid rain program.

(5) "Act" means the federal Clean Air Act, as defined in s. 285.01 (19), Stats.

(6) "Actual emissions" means the total emissions generated by a facility over a specified period of time taking into account any reductions made by a control device or technique.

(7) "Actual operation" means, for purposes of nonmetallic mineral quarrying or mining, the number of calendar days on which there is operation of any blasting, drilling or other movement or transfer of naturally occurring rock at a quarry or mine.

(8) "Actual production" means, for purposes of nonmetallic mineral quarrying or mining, sales amount in tons of nonmetallic mineral as measured at the quarry or mine.

(9) "Administrator" means the administrator of the EPA or designee.

(10) "Affected source" means a stationary source that includes one or more affected units that are subject to an emissions reduction requirement or emissions limitation under the acid rain program.

(11) "Affected unit" means an emissions unit that is subject to any emissions reduction requirement or emissions limitation under the acid rain program.

(12) "Air contaminant" has the meaning given in s. 285.01 (1), Stats.

(13) "Air contaminant source" has the meaning given in s. 285.01 (2), Stats.

(14) "Air curtain destructor" has the meaning given in s. 289.51, Stats.

(15) "Air pollutant" means an air contaminant as defined in s. 285.01 (1), Stats.

(16) "Air pollution" means the presence in the atmosphere of one or more air contaminants in such quantities and of such duration as is or tends to be injurious to human health or welfare, animal or plant life, or property, or would unreasonably interfere with the enjoyment of life or property.

(17) "Air pollution control permit" has the meaning given in s. 285.01 (4), Stats.

(18) "Air quality control region" or "AQCR" means an area designated under 42 USC 7407 or s. NR 404.03 in which a plan to maintain or achieve air standards is implemented on a regional basis. Air quality control regions include both interstate and intrastate regions.

(19) "Air region" means an area such as an AQCR designated pursuant to federal or Wisconsin laws in which a program to maintain or achieve air standards is implemented on a regional basis.

(19m) "Air standard" or "ambient air quality standard" means the specified levels of air quality which are necessary to protect public health and welfare. Ambient air quality standards include primary and secondary air standards.

(20) "Allocation of the available air resource" has the meaning designated in s. 285.01 (5), Stats.

(21) "Allowable emission" has the meaning given in s. 285.01 (7), Stats.

(22) "Alternate designated representative" means a responsible natural person, authorized by the owners and operators of an affected source and of all affected units at the source to act in lieu of the designated representative, as evidenced by a certificate of representation submitted in accordance with 40 CFR 72.22, who may act on behalf of the designated representative to represent and legally bind each owner and operator, as a matter of federal law, in matters pertaining to the acid rain program.

(23) "Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the department's satisfaction to produce, in specific cases, results adequate for the department's determination of compliance.

(24) "Ambient air" means the portion of the atmosphere external to buildings and to which the general public has access.

(25) "Ambient air increment" or "air increment" means the maximum allowable increase in concentration of an air contaminant above the base line concentration of the air contaminant.

(26) "Applicable requirement" means all of the following as they apply to emissions units at a source, including requirements that have been promulgated or approved by EPA or the department through rulemaking at the time of permit issuance but for which compliance is required after the date of permit issuance:

(a) Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking in 40 CFR part 52.

(b) Any term or condition of any construction permit issued pursuant to ch. NR 405, 406 or 408 or to regulations approved or promulgated by EPA through rulemaking under title I of the Act (42 USC 7401 to 7515).

(c) Any standard or other requirement under section 111 of the Act (42 USC 7411).

(d) Any standard or other requirement under section 112 of the Act (42 USC 7412).

(e) Any standard or other requirement of the acid rain program.

(f) Any requirements established pursuant to section 504 (b) or section 114 (a) (3) of the Act (42 USC 7661c (b) or 7414 (a) (3)).

(g) Any standard or other requirement governing solid waste incineration, under section 129 of the Act (42 USC 7429).

(h) Any standard or other requirement for consumer and commercial products, under section 183 (e) of the Act (42 USC 7511b (e)).

(i) Any standard or other requirement for tank vessels, under section 183 (f) of the Act (42 USC 7511b (f)).

(j) Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under title VI of the Act (42 USC 7671 to 7671q), unless the administrator has determined that the requirements need not be contained in an operation permit.

(k) Any national ambient air quality standard or increment or visibility requirement under part C of title I of the Act (42 USC 7470 to 7492).

(L) Any emission limit or other requirement in ch. 285, Stats., or chs. NR 400 to 499.

(m) Any source–specific emission limitation established pursuant to ch. 285, Stats., or rules promulgated thereunder.

(26m) "Application equipment" means a device used to apply adhesive, coating, ink or polyester resin materials.

(27) "Approved" means approved by the department of natural resources.

(27m) "Approved material safety data sheet" means a material safety data sheet which meets the reporting requirements of the Superfund Amendments Reauthorization Act of 1986 (42 USC 9671 to 9675) or regulations of the occupational safety and health administration under 29 CFR 1910.1200 (g), as in effect on February 1, 1998.

(28) "Baseline concentration" has the meaning given in s. 285.01 (11), Stats.

(29) "Basic emissions unit" means the smallest collection of equipment which in combination emits or is capable of emitting any air contaminant.

(30) "Belt conveyor" means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

(31) "Best available control technology" has the meaning given in s. 285.01 (12), Stats.

(32) "Biweekly" means any 14–day period of time.

(33) "Boiler" means any device with an enclosed combustion chamber in which fuel is burned to heat a liquid for the primary purpose of producing heat or power by indirect heat transfer.

(34) "Breakdown" means a sudden failure of emission control or emission monitoring equipment to function as a result of wear, failure to repair, breakage, unavoidable damage, or other unintentional causes.

(35) "Bucket elevator" means a conveying device for grain, minerals or other materials consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

(36) "Bulk gasoline plant" means a gasoline storage and distribution facility which receives gasoline from bulk terminals, stores it in stationary storage tanks, and subsequently distributes it to gasoline dispensing facilities.

(36m) "Business day" means any day except Saturday, Sunday or a state holiday as designated in s. 230.35 (4) (a), Stats.

(37) "Capacity" means, for purposes of nonmetallic mineral processing, the cumulative rated capacity of all initial crushers that are part of a processing plant.

(38) "Capture efficiency" means the weight per unit time of an air contaminant entering a capture system and delivered to a control device divided by the weight per unit time of the air contaminant generated by the source, expressed as a percentage.

(39) "Capture system" means the equipment (including hoods, ducts, fans, etc.) used to contain, capture, or transport an air contaminant to a control device.

(40) "Coal" means all solid fuels classified as anthracite, bituminous, subbituminous or lignite by ASTM designation D388–99e1 (2004), incorporated by reference in s. NR 484.10 (7).

(41) "Coal–derived fuel" means any fuel, whether in a solid, liquid or gaseous state, produced by the mechanical, thermal or chemical processing of coal, such as pulverized coal, coal refuse, liquified or gasified coal, washed coal, chemically cleaned coal, coal–oil mixtures and coke.

(42) "Coin–operated dry cleaning machine" means a dry cleaning machine that is operated by the customer by placing articles into the machine, turning the machine on, and removing articles from the machine.

(43) "Cold cleaning" means the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition.

(44) "Commence construction" means to engage in a program of on–site construction, including a site clearance, grading, dredging or landfilling specifically designed for a stationary source in preparation for the fabrication, erection or installation of the building components of the stationary source.

(45) "Commence modification" means to engage in a program of on–site modification which may include site clearance,

grading, dredging or landfilling in preparation for a specific modification of a stationary source.

(45m) "Contact adhesive" means an adhesive that is applied to 2 substrates, dried and mated under only enough pressure to result in good contact. The bond is immediate and sufficiently strong to hold pieces together without further clamping, pressure or airing.

(46) "Control device" means equipment used to destroy or remove air contaminants in a gas stream exiting a capture system prior to emission.

(47) "Control efficiency" means the percentage by which a control device or technique reduces the emissions from a stationary source.

(48) "Control system" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of air contaminants emitted to the atmosphere.

(49) "Conveyorized non−vapor degreasing" means the continuous process of cleaning and removing soils from metal surfaces by operating with non−vaporized solvents.

(50) "Conveyorized vapor degreasing" means the continuous process of cleaning and removing soils from metal surfaces by operating with vaporized solvents.

(51) "Crusher" means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill and impactor.

(52) "Day" means a 24−hour period beginning at midnight.

(53) "Department" means the department of natural resources, state of Wisconsin.

(54) "Designated representative" means a responsible natural person authorized by the owners and operators of an affected source and of all affected units at the source, as evidenced by a certificate of representation submitted in accordance with 40 CFR 72.20 to 72.25, to represent and legally bind each owner and operator, as a matter of federal law, in matters pertaining to the acid rain program.

(54m) "Digital printing" means the transfer of electronic files directly from a computer to an electronically driven output device that prints the image directly on the selected substrate. Printing using home and office equipment is excluded from this definition.

(55) "Direct source" means any stationary source which may directly result in the emission of any air contaminant at a fixed location.

Note: Examples are a foundry, a grain elevator, a gravel or stone quarry, a paper mill, a power plant or the demolition of a building.

(57) "Emission" means a release, whether directly or indirectly, of any air contaminant to the atmosphere.

(58) "Emission limitation" or "emission standard" has the meaning given in s. 285.01 (16), Stats.

(59) "Emission point" means any individual opening at a fixed location through which air contaminants are emitted.

(60) "Emission reduction option" has the meaning given in s. 285.01 (17), Stats.

(61) "Emissions unit" means any part of a stationary source which emits or is capable of emitting any air contaminant.

(62) "Equivalent method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the department's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

(63) "Facility" means an establishment—residential, commercial, institutional or industrial—which emits or causes emissions of air contaminants.

(64) "Federally enforceable" means all limitations and conditions which are enforceable by the administrator, including those requirements developed pursuant to chs. NR 440 and 447 to 449 and subch. III of ch. NR 446 and under sections 111 and 112 of the Act (42 USC 7411 and 7412), requirements within any applicable state implementation plan and any permit requirements established pursuant to ch. NR 405, 406, 407, 408, or 409 except those limitations and conditions which are designated as not federally enforceable.

Note: Permit or state implementation plan limitations generally considered federally enforceable are limitations on the allowable capacity of the equipment, requirements for the installation, operation and maintenance of pollution control equipment, limits on hours of operation and restrictions on amounts of materials combusted, stored or produced. To be federally enforceable, restrictions on operation, production or emissions must reflect the shortest practicable time period, in no event for a period in excess of 30 days, and they must be tied to other enforceable operating restrictions at the source. General limitations on potential to emit, such as yearly limits in tons per year, by themselves, are not considered federally enforceable. The use of hourly, daily, weekly or monthly rolling averages are generally acceptable. Any federally enforceable limitations or conditions must be practically enforceable, ensure continuous compliance with the restrictions and include adequate testing, monitoring and recordkeeping procedures in an applicable federally issued permit, in a federally approved state implementation plan or in a permit issued under the state implementation plan.

(65) "Fixed capital cost" means the capital needed to provide all of the depreciable components of a stationary source.

(66) "Fixed plant" means any nonmetallic mineral processing plant at which the processing equipment is attached or clamped by a cable, chain, turnbuckle, bolt or other means, except electrical connections, to any anchor, slab or structure including bedrock.

(66m) "Forest County Potawatomi Community Class I area" or "FCPC Class I area" means those land parcels of the Forest County Potawatomi Reservation that are designated as a non−federal Class I area by EPA under 40 CFR 52.2581. The FCPC Class I area has a geographic center, as determined by the department, at latitude 45.49978°N, longitude 88.64377°W.

(67) "Fossil fuel" means natural gas, petroleum, coal or any form of solid, liquid or gaseous fuel derived from such material.

(68) "Fossil fuel−fired" means the combustion of fossil fuel or any derivative of fossil fuel, alone or in combination with any other fuel, without regard to the percentage of fossil fuel consumed in any calendar year.

(69) "Fuel" means any solid, liquid or gaseous materials used to produce useful heat or power by burning.

(70) "Fuel oil" means any petroleum−based fuel, including diesel fuel or petroleum derivatives such as oil tar, as defined in ASTM D396−02a, incorporated by reference in s. NR 484.10 (8), and any recycled or blended petroleum products or petroleum by−products used as a fuel whether in a liquid, solid or gaseous state.

(71) "Fugitive emission" means an emission from any emission point within a facility other than a flue or stack.

(72) "Gasoline" means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater which is used as a fuel for internal combustion engines.

(73) "Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

(73m) "General permit" means a permit that may be applicable to similar stationary sources and is issued in accordance with s. 285.60 (3), Stats.

(74) "Graphic arts" means any printing operations described by 2−digit major group 27 in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05 (1).

(74m) "Greenhouse gases" or "GHG" means an air pollutant that is the aggregate of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

(75) "Grinding mill" means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the

air conveying system, air separator or air classifier, where such systems are used.

(76) "Halogenated hazardous air pollutant compound" or "halogenated HAP compound" means methylene chloride (CAS no. 75–09–2), perchloroethylene (CAS no. 127–18–4), trichloroethylene (CAS no. 79–01–6), 1,1,1–trichloroethane (CAS no. 71–55–6), carbon tetrachloride (CAS no. 56–23–5) or chloroform (CAS no. 67–66–3).

(77) "Halogenated hazardous air pollutant solvent" or "halogenated HAP solvent" means any solvent that contains a halogenated HAP compound or a combination of halogenated HAP compounds, in a total concentration greater than 5% by weight. The concentration of these compounds in the solvent may be determined using Method 18 of Appendix A, 40 CFR part 60, incorporated by reference in s. NR 484.04 (16), material safety data sheets or engineering calculations.

(78) "Hazardous air pollutants listed under section 112(b) of the act" means the federally regulated air pollutants included in the list in section 112(b)(1) of the Act (42 USC 7412(b)(1)) as revised by 40 CFR part 63 Subpart C.

(79) "Heat input" means the total gross calorific value per unit of time of all fuels being burned, where gross calorific value of a fuel is measured by ASTM Method D240–02, D1826–94 or D5865–04, incorporated by reference in s. NR 484.10 (4), (26) and (55g). Where the test method gives a higher and a lower heating value, heat input is calculated in Btu per hour using the higher heating value of the fuel.

(80) "Highway" has the meaning given it in s. 340.01 (22), Stats.

(81) "Hour" means any 3,600 second period.

(82) "Implementation plan" means a plan adopted to implement, maintain and enforce air standards within the state, an air region, or a portion of the state or region.

(83) "Incinerator" means a combustion apparatus designed for high temperature operation in which solid, semisolid, liquid, or gaseous combustible wastes are ignited and burned to produce solid and gaseous residues containing little or no combustible material.

(84) "Increase in the net amount of emissions" has the same meaning as the phrase "net emissions increase" which is defined in s. NR 405.02 (24).

(85) "Indirect source" means any stationary source which attracts or may attract mobile source activity or on which mobile source activity is conducted, thus resulting in the indirect emissions of any air contaminant, at or on the indirect source itself, attributable to the motor vehicles or the mobile source activity. Such indirect sources include, but are not limited to highways and roads; parking facilities; retail, commercial and industrial facilities; recreation, amusement, sports and entertainment facilities; airports, bus terminals and train stations; office and government buildings; and educational facilities.

(85m) "Industrial cleaning operations" means the process of cleaning products, product components, tools, equipment or general work areas during production, repair, maintenance or servicing with solvents or solvent solutions.

(86) "Industrial sand mine" means any mine, pit or quarry to which the standard industrial classification (SIC) category number 1446 applies. The SIC category for a source is determined by reference to the Standard Industrial Classification Manual, 1987, which is incorporated by reference in s. NR 484.05 (1).

(87) "Infectious waste" has the meaning given in s. 287.07 (7) (c) 1. c., Stats.

Note: For more detailed information on what the department treats as infectious waste, see subch. II of ch. NR 526.

(88) "Intersection" has the meaning given in s. 340.01 (25), Stats.

(89) "Kraft pulp" means any pulp produced with an alkaline sulfide solution containing sodium hydroxide and sodium sulfide for a cooking liquor.

(90) "Laboratory" means a facility or portion of a multi–use facility which does not produce a product for regular commercial use or sale and which is used primarily for scientific or technical experimentation or observation of matter for the purpose of research, development, quality assurance, analysis or teaching.

(91) "Ledge rock quarry" means any open pit to which the standard industrial classification (SIC) category number 1411, 1422, 1423, or 1429 applies where drilling and blasting is required to extract the nonmetallic mineral. The SIC category for a source is determined by reference to the Standard Industrial Classification Manual, 1987, which is incorporated by reference in s. NR 484.05 (1).

(92) "Light–duty trucks" means any motor vehicles rated at 3864 kilograms (8500 pounds) gross weight or less which are designed primarily for the purpose of transporting goods and materials, or derivatives of such vehicles.

(93) "Lowest achievable emission rate" has the meaning given in s. 285.01 (23), Stats.

(93m) "Maintenance cleaning" means an activity carried out to keep general work areas, tools, machinery or equipment, excluding application equipment, in clean and good operational condition.

(94) "Malfunction" means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown are not malfunctions.

(95) "Maximum theoretical emissions" means the quantity of air contaminants that theoretically could be emitted by a stationary source without control devices based on the design capacity or maximum production capacity of the source. When determining annual maximum theoretical emissions, a source shall be presumed to operate 8,760 hours per year unless its physical design precludes 8,760 hours of operation per year. Where a source's physical design restricts the number of hours it may operate, annual maximum theoretical emissions shall be calculated taking this restriction into account. In determining the maximum theoretical emissions of VOCs for a source, the design capacity or maximum production capacity shall include the use of raw materials, coatings and inks with the highest VOC content used in practice by the source. In determining the maximum theoretical emissions of a hazardous air contaminant for a source, the design capacity or maximum production capacity shall include the use of raw materials, coatings, inks and fuels with the highest hazardous air contaminant content used in practice by the source. Realistic operating conditions shall be taken into account in determining emissions under this subsection.

(96) "Metropolitan county" means a county which has been designated as either a metropolitan statistical area or a primary metropolitan statistical area by the federal office of management and budget in Metropolitan Areas, 1993, incorporated by reference in s. NR 484.05 (3).

Note: The 20 Wisconsin counties which have been so designated are the counties of Brown, Calumet, Chippewa, Dane, Douglas, Eau Claire, Kenosha, La Crosse, Marathon, Milwaukee, Outagamie, Ozaukee, Pierce, Racine, Rock, Sheboygan, St. Croix, Washington, Waukesha and Winnebago.

(97) "Minor source" means any stationary source which is not a major source.

Note: Definitions for "major source" which apply in different situations are given in ss. NR 405.02 (22), 407.02 (4), 408.02 (21), 460.02 (24), 468.20 (2) (L) and 468.30 (2) (g).

(98) "Mobile source" means any motor vehicle, vessel, aircraft or equipment other than a semistationary source which is capable of emitting any air contaminant while moving or idling on

the ground or in the water. Mobile sources include automobiles, motorcycles, trucks, buses, snowmobiles, motorboats, steamships, earthmoving equipment, locomotives and aircraft.

(99) "Modification" means any physical change in, or change in the method of operation of, a stationary source that increases the amount of emissions of an air contaminant or that results in the emission of an air contaminant not previously emitted. A modification does not include any changes identified in s. NR 406.04 (4).

(102) "Motor vehicle" or "vehicle" means every self−propelled device, except railroad trains, by which any person or property is or may be transported or drawn upon a highway.

(103) "Municipality" has the meaning given it in s. 285.01 (28), Stats.

(104) "Natural gas" means a naturally occurring fluid mixture of hydrocarbons containing little or no sulfur such as methane, ethane or propane, produced in geological formations beneath the earth's surface, and maintaining a gaseous state at standard atmospheric temperature and pressure conditions.

(105) "New direct or portable source" means a direct or portable source, the construction or modification of which is commenced after April 1, 1972, or the effective date of promulgation of an emission limit which applies.

(107) "Nitrogen oxides" or "NO_x" means all oxides of nitrogen except nitrous oxide.

(107m) "Non−atomized flow" means the use of solvent or solvent solution in the form of a liquid stream without atomization to remove uncured adhesives, uncured inks, uncured coatings or contaminants from an article.

(108) "Nonattainment area" has the meaning given in s. 285.01 (30), Stats.

(109) "Nonmetallic mineral" means any of the following minerals or any mixture of which more than half the weight is any combination of the following minerals:

(a) Crushed and broken stone, including limestone, dolomite, granite, traprock, sandstone, quartz, quartzite, marl, marble, slate, shale, oil shale and shell.

(b) Sand and gravel.

(c) Clay including kaolin, fireclay, bentonite, Fuller's earth, Ball clay and common clay.

(d) Rock salt.

(e) Gypsum.

(f) Sodium compounds, including sodium carbonate, sodium chloride and sodium sulfate.

(g) Pumice.

(h) Gilsonite.

(i) Talc and pyrophyllite.

(j) Boron, including borax, kernite and colemanite.

(k) Barite.

(L) Fluorospar.

(m) Feldspar.

(n) Diatomite.

(o) Perlite.

(p) Vermiculite.

(q) Mica.

(r) Kyanite, including andalusite, sillimanite, topaz and dumortierite.

(110) "Nonmetallic mineral processing plant" means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including but not limited to lime plants, power plants, steel mills, asphalt concrete plants and portland cement plants.

(111) "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Note: 20% opacity is equal to one unit on the Ringlemann Chart.

(112) "Open top vapor degreasing" means the batch process of cleaning and removing soils from metal surfaces by condensing hot solvent vapor on the colder metal parts.

(113) "Operator" means any person who leases, controls, operates or supervises a facility, an air contaminant source, or air pollution control equipment.

(114) "Organic compound" means a compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates and ammonium carbonate.

(115) "Overall emission reduction efficiency" means the weight per unit time of an air contaminant removed by a control device divided by the weight per unit time of the air contaminant generated by the source, expressed as a percentage.

(116) "Ozone" means an allotropic form of oxygen found in the atmosphere which is a photochemical oxidant that oxidizes compounds not readily oxidized by oxygen alone; ozone is a secondary pollutant resulting from the conversion of oxygen in the presence of sunlight and such precursors as volatile organic compounds and nitrogen oxides.

(117) "Ozone season" means the period from May 1 through September 30 of any year.

(118) "Particulate" or "particulate matter" means any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than 100 micrometers.

(119) "Particulate matter emissions" means all finely divided solid or liquid material, other than uncombined water, emitted to the ambient air as measured by an applicable reference method or an equivalent or alternative method specified by the department.

(120) "Parts per million" or "ppm" means parts of a contaminant per million parts of gas by volume.

(121) "Performance test" means measurements of emissions or other procedures used for the purpose of determining compliance with a standard of performance.

(122) "Permit" means any air pollution control permit issued by the department under s. 285.60, Stats.

(123) "Person" means any individual, corporation, company, cooperative, operator, tenant, lessee, syndicate, partnership, co−partnership, firm, association, trust, estate, public or private institution, joint stock company, political subdivision of the state of Wisconsin, state agency, interstate agency, federal agency, or any legal successor, representative, agent or agency of the foregoing.

(123e) "$PM_{2.5}$" means particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers as measured in the ambient air by a reference method based on Appendix L of 40 CFR part 50, incorporated by reference in s. NR 484.04 (6g), and designated in accordance with 40 CFR part 53, incorporated by reference in s. NR 484.03 (5), or by an equivalent method.

(123m) "$PM_{2.5}$ emissions" means $PM_{2.5}$ emitted to the ambient air as measured by an applicable reference method or an equivalent or alternative method specified by the department. $PM_{2.5}$ emissions include filterable emissions and gaseous emissions from a source or activity that condense to form particulate matter at ambient temperatures.

(123s) "PM_{10}" means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured in the ambient air by a reference method based on Appendix J of 40 CFR part 50, incorporated by reference in s. NR 484.04 (5), and designated in accordance with 40 CFR part 53, incorporated by reference in s. NR 484.03 (5), or by an equivalent method.

(124) "PM_{10} emissions" means finely divided solid or liquid material, with an aerodynamic diameter less than or equal to a nominal 10 micrometers, emitted to the ambient air as measured by an applicable reference method or an equivalent or alternative method specified by the department. PM_{10} emissions include fil-

terable emissions and gaseous emissions from a source or activity that condense to form particulate matter at ambient temperatures.

(125) "Portable plant" means, with reference to any nonmetallic mineral processing plant, any plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there may be no cable, chain, turnbuckle, bolt or other means, except electrical connections, by which any piece of equipment is attached or clamped to any anchor, slab or structure, including bedrock, that would have to be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

(126) "Portable source" means any facility, installation, operation or equipment which may directly result in the emission of any air contaminant only while at a fixed location but is capable of being transported to a different location. A portable source is a type of direct stationary source.

Note: Examples are a portable asphalt plant, a portable package boiler or a portable air curtain destructor.

(127) "Potential to emit" means the maximum capacity of a stationary source to emit any air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air contaminant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the administrator.

(128) "Process line" means one or more actions or unit operations which must function simultaneously or in sequence in order to manufacture or modify a product.

Note: For example, a spray booth, conveyor and drying oven are considered a process line.

(129) "Reasonably available control technology" or "RACT" means that which provides the lowest emission rate that a particular source is capable of achieving by the application of control technology that is reasonably available considering technological and economic feasibility. Such technology may previously have been applied to similar, but not necessarily identical, source categories.

(130) "Reconstruction" means the removal of components of a stationary source and the substitution of those components with similar new components to such an extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new stationary source. The term "reconstruction" does not apply to minor sources.

(131) "Reference method" means any method of sampling and analyzing for an air pollutant as described in Appendix A of 40 CFR part 60, Appendix B of 40 CFR part 61 or Appendix A of 40 CFR part 63, incorporated by reference in s. NR 484.04 (13), (23), and (25).

(131m) "Registration permit" means a permit that may be applicable to stationary sources with low actual or potential emissions and is issued in accordance with s. 285.60 (2g), Stats.

(132) "Relocation" means the removal of a stationary source from one location and the siting of the stationary source at a different location.

(133) "Remediation" means the removal of a contaminant from a solid or liquid material.

(133e) "Remote reservoir cleaner" means a cleaning device in which solvents or solvent solutions are pumped from a container to a sink–like work area and the solvents or solvent solutions from the sink–like area drain into an enclosed container while parts are being cleaned.

(133m) "Repair cleaning" means a cleaning operation or activity carried out during a repair process.

(133s) "Repair process" means the process of returning a damaged object or an object not operating properly to good operating condition.

(134) "Replacement of a source" means the physical dismantling of a stationary source and the substitution of that source with a stationary source which is similar in operating capacity and function.

(135) "Residual fuel oil" means an industrial fuel oil of grade No. 4, 5 or 6, as determined by the specifications in ASTM D396–02a, incorporated by reference in s. NR 484.10 (8).

(136) "Responsible official" means one of the following:

(a) For a corporation, one of the following:

1. A president, secretary, treasurer or vice–president of the corporation in charge of a principal business function.

2. Any other person who performs similar policy or decision–making functions for the corporation.

3. A duly authorized representative of a person listed in subd. 1. or 2. if the representative is responsible for the overall operation of one or more manufacturing, production or operating facilities applying for or subject to a permit and the representative is approved in advance by the department.

(b) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

(c) For a municipality, or a state, federal or other public agency: either a principal executive officer or ranking elected official. For the purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency, for example, a regional administrator of EPA.

(d) Notwithstanding pars. (a), (b) and (c), for affected sources, the designated representative.

(136m) "Restricted use RICE" means a stationary RICE that is one of the following:

(a) Operated no more than 200 hours per year and that meets the definition of emergency stationary RICE or black start engine in 40 CFR 63.6675.

(b) Operated in accordance with the definition of limited use stationary RICE in 40 CFR 63.6675.

Note: An internal combustion engine that meets the definition of non–road engine in 40 CFR 63.6675 is not a stationary RICE.

(136r) "RICE" means a reciprocating internal combustion engine.

(137) "Ringlemann Chart" means the chart published by the U.S. bureau of mines in which are illustrated graduated shades of grey to black for use in estimating the shade or density of smoke.

Note: One unit on the Ringlemann Chart equals 20% opacity. The Ringlemann Chart is published as Figure 1 in "Fundamentals of Smoke Abatement," December 1950, bureau of mines Information Circular 7588, which is incorporated by reference in s. NR 484.06 (2).

(138) "Road" means the entire width between boundary lines of any way open to the public for vehicular travel.

(139) "Roadway" has the meaning given it in s. 340.01 (54), Stats.

(140) "Rolling 12 month average" means, with reference to only ledge rock quarries and industrial sand mines, a monthly average calculated each month by adding the total actual production of the preceding 12 calendar months, and dividing the total by 12. If a new quarry has been in existence for less than 12 calendar months, then the average shall be calculated by adding the total actual production since initial operation, and dividing the total by the number of calendar months subsequent to and including the month of initial operation.

(141) "Screening operation" means a device for separating material according to size by passing undersize material through one or more mesh surfaces, screens or similar surfaces in series, and retaining oversize material on the mesh surfaces, screens or similar surfaces. Screening operation includes any grizzly, rotating screen or deck type screen. Screening operation does not include washers that are designed to remove unwanted or unnecessary material from the product.

(142) "Secretary" means the secretary of the department of natural resources, state of Wisconsin.

(143) "Semistationary source" means any facility, operation or equipment that has the capability of emitting any air contaminant while moving, but generally does not emit while moving.

Note: Examples are diesel cranes, air compressors and electric generators such as those used at construction sites.

(144) "Shutdown" means the cessation of operation of a direct or portable source or of emission control equipment.

(145) "Smoke" means all products of combustion of sufficient density to be observable, including but not limited to carbon, dust, fly ash, and other particles, but not including uncombined water.

(146) "Solvent" means organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents.

(147) "Stack" means any device or opening designed or used to emit air contaminants to the ambient air.

(148) "Standard conditions" means a temperature of 20°C (293 K, 68°F) and a pressure of 760 millimeters of mercury (101.3 kPa, 29.92 in Hg).

(149) "Standard industrial classification code" or "SIC code" means the series of codes which classify facilities according to the type of economic activity in which they are engaged, as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05 (1).

(150) "Standard pressure" means a pressure of 760 millimeters of mercury (29.92 inches of mercury).

(151) "Standard temperature" means a temperature of 20°C (68°F).

(152) "Startup" means the setting in operation of a facility or its emission control equipment for any purpose which produces emissions.

(153) "Stationary source" has the meaning given in s. 285.01 (41), Stats.

(154) "Storage bin" means a facility for storage, including surge bins, for nonmetallic minerals prior to further processing or loading.

(155) "Technological infeasibility" means incapable of being accomplished or carried out as a matter of practicality; i.e., technically impracticable rather than technically impossible.

(156) "Temperature sensor" means a thermometer or thermocouple used to measure temperature.

(157) "Thermal evaporation unit" means any device which uses temperatures greater than 140°F to assist in evaporating organic compounds from soil or water.

(158) "Threshold limit value" means the airborne concentration of substances, which represents exposure conditions under which it is believed that nearly all workers may be repeatedly exposed to day after day without adverse health effects.

(159) "Total reduced sulfur" or "TRS" means the sum of any sulfur containing compounds in which the oxidation state of sulfur is less than zero.

Note: Common examples of such compounds are hydrogen sulfide, carbonyl sulfide, dimethyl sulfide, carbon disulfide, dimethyl disulfide and mercaptans.

(160) "Transfer point" means a point in a conveying operation where a nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile from a belt conveyor.

(161) "Uncombined water" means water not chemically or physically bound to another materials.

(162) "Volatile organic compound" or "VOC" means any organic compound which participates in atmospheric photochemical reactions. This includes any such organic compound other than the following compounds, which have been determined to have negligible photochemical reactivity:

(a) Organic compounds excluded for all purposes:

1. Methane.
2. Ethane.
3. Methylene chloride (Dichloromethane).
4. 1,1,1–Trichloroethane (Methyl chloroform).
5. Trichlorofluoromethane (CFC–11).
6. Dichlorodifluoromethane (CFC–12).
7. Chlorodifluoromethane (HCFC–22).
8. Trifluoromethane (HFC–23).
9. 1,1,2–Trichloro–1,2,2–trifluoroethane (CFC–113).
10. 1,2–Dichloro–1,1,2,2–tetrafluoroethane (CFC–114).
11. Chloropentafluoroethane (CFC–115).
12. 1,1,1–Trifluoro–2,2–dichloroethane (HCFC–123).
13. 2–Chloro–1,1,1,2–tetrafluoroethane (HCFC–124).
14. Pentafluoroethane (HFC–125).
15. 1,1,2,2–Tetrafluoroethane (HFC–134).
16. 1,1,1,2–Tetrafluoroethane (HFC–134a).
17. 1,1–Dichloro–1–fluoroethane (HCFC–141b).
18. 1–Chloro–1,1–difluoroethane (HCFC–142b).
19. 1,1,1–Trifluoroethane (HFC–143a).
20. 1,1–Difluoroethane (HFC–152a).
21. Parachlorobenzotrifluoride (PCBTF).
22. Cyclic, branched or linear completely methylated siloxanes.
23. Acetone.
24. Perchloroethylene (Tetrachloroethylene).
25. 3,3–Dichloro–1,1,1,2,2–pentafluoropropane (HCFC–225ca).
26. 1,3–Dichloro–1,1,2,2,3–pentafluoropropane (HCFC–225cb).
27. 1,1,1,2,3,4,4,5,5,5–Decafluoropentane (HFC 43–10mee).
28. Difluoromethane (HFC–32).
29. Ethylfluoride (HFC–161).
30. 1,1,1,3,3,3–Hexafluoropropane (HFC–236fa).
31. 1,1,2,2,3–Pentafluoropropane (HFC–245ca).
32. 1,1,2,3,3–Pentafluoropropane (HFC–245ea).
33. 1,1,1,2,3–Pentafluoropropane (HFC–245eb).
34. 1,1,1,3,3–Pentafluoropropane (HFC–245fa).
35. 1,1,1,2,3,3–Hexafluoropropane (HFC–236ea).
36. 1,1,1,3,3–Pentafluorobutane (HFC–365mfc).
37. Chlorofluoromethane (HCFC–31).
38. 1–Chloro–1–fluoroethane (HCFC–151a).
39. 1,2–Dichloro–1,1,2–trifluoroethane (HCFC–123a).
40. 1,1,1,2,2,3,3,4,4–Nonafluoro–4–methoxybutane ($C_4F_9OCH_3$ or HFE–7100).
41. 2–(Difluoromethoxymethyl)–1,1,1,2,3,3,3–heptafluoropropane ($(CF_3)_2CFCF_2OCH_3$).
42. 1–Ethoxy–1,1,2,2,3,3,4,4,4–nonafluorobutane ($C_4F_9OC_2H_5$ or HFE–7200).
43. 2–(Ethoxydifluoromethyl)–1,1,1,2,3,3,3–heptafluoropropane ($(CF_3)_2CFCF_2OC_2H_5$).
44. Methyl acetate.
45. 1,1,1,2,2,3,3–heptafluoro–3–methoxy–propane (n–$C_3F_7OCH_3$ or HFE–7000).
46. 3–Ethoxy–1,1,1,2,3,4,4,5,5,6,6,6–dodecafluoro–2–(trifluoromethyl) hexane (HFE–7500).
47. 1,1,1,2,3,3,3–Heptafluoropropane (HFC 227ea).
48. Methyl formate ($HCOOCH_3$).
49. 1,1,1,2,2,3,4,5,5,5–decafluoro–3–methoxy–4–trifluoromethyl–pentane ($C_2F_5CF(OCH_3)CF(CF_3)_2$ or HFE–7300).
50. Perfluorocarbon compounds which fall into the following classes:

a. Cyclic, branched or linear completely fluorinated alkanes.

b. Cyclic, branched or linear completely fluorinated ethers with no unsaturations.

c. Cyclic, branched or linear completely fluorinated tertiary amines with no unsaturations.

d. Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

51. Dimethyl carbonate ($C_3H_6O_3$).

52. Propylene carbonate ($C_4H_6O_3$).

53. Trans−1,3,3,3−tetrafluoropropene (HFO−1234ze).

54. HCF_2OCF_2H (HFE−134).

55. $HCF_2OCF_2OCF_2H$ (HFE−236cal2).

56. $HCF_2OCF_2CF_2OCF_2H$ (HFE−338pcc13).

57. $HCF_2OCF_2OCF_2CF_2OCF_2H$ (H−Galden 1040X or H−Galden ZT 130 (or 150 or 180)).

58. Trans−1−chloro−3,3,3−trifluoroprop−1−ene (Solstice™ 1233zd(E)).

59. 2,3,3,3−tetrafluoropropene (HFO−1234yf).

60. 2−amino−2−methyl−1−propanol (AMP; CAS number 124−68−5).

61. 1,1,2,2−tetrafluoro−1−(2,2,2−trifluoroethoxy) ethane (HFE−347pcf2).

62. *cis*−1,1,1,4,4,4−hexafluorobut−2−ene (HFO−1336mzz−Z).

(b) The following compound is subject to all recordkeeping, emissions reporting, photochemical dispersion modeling, inventory requirements and emissions fees which apply to VOCs and shall be uniquely identified in emission reports, but is not considered a VOC for purposes of VOC emissions limitations or VOC content requirements: t−butyl acetate.

Note: The test methods used to measure VOC are specified in s. NR 439.06 (3).

(163) "Year" or "yearly" means any consecutive 12−month period of time.

History: Renum. from NR 154.01 and am. (1), (2), (3), (94) and (96), cr. (7), (8), (17), (18), (32), (34), (53) and (60), (64) renum. from NR 404.01 (7), Register, September, 1986, No. 369, eff. 10−1−86; cr. (46m), Register, January, 1987, No. 373, eff. 2−1−87; am. (66), Register, September, 1987, No. 381, eff. 10−1−87; emerg. am. (66), eff. 10−1−87; r. (14) and (91), cr. (47e), (55e) and (80s), am. (59) and (69), renum. (98) to be NR 406.02 (12); (5e), (17m), (43m), (46s), (53e) and (53s) renum. from NR 410.02 (1), NR 406.02 (3), (4) and (6) and NR 410.02 (4) and (5) and am. (46s), Register, April, 1988, No. 388, eff. 5−1−88; am. (66), renum. (77) to be NR 445.02 (9m), cr. (66m), (69m) and (77), Register, December, 1988, No. 396, eff. 1−1−89; r. (1), (22), (25), (30), (43), (47), (48), (52), (73) and (85), am. (2), (3), (5e), (8), (17), (18), (32), (34), (40), (45), (53), (55), (60), (70), (77), (95), (96) and (100), (11m), (16e), (21e), (21m), (22), (26m), (51m) and (72) renum. from NR 420.02 (3), (4), (7), 422.02 (6), 421.02 (2), 420.02 (12), 421.02 (5) and 419.02 (5) renum. (36), (71) and (72) to be NR 422.02 (12s), 420.02 (29m) and 420.02 (29p), Register, February, 1990, No. 410, eff. 3−1−90; (4m) and (43) renum. from NR 440.02 (4) and 440.64 (2) (d), Register, September, 1990, No. 417, eff. 10−1−90; am. (4), (26), (31), (66) and (80), cr. (78m) and (98), renum. (16) to be NR 406.02 (1), Register, August, 1991, No. 428, eff. 9−1−91; am. (50), r. (13), (5s), (60m), (80m) and (98m), renum. from NR 404.02 (1), NR 415.02 (4) and (7), NR 429.02 (2) and am., renum. (46s), (47e) and (51m) to be (47), (48) and (52), (37), (82), (92) and (101) to be NR 417.02 (1), 449.02 (10m), (11m) and (18), Register, May, 1992, No. 437, eff. 6−1−92; emerg. am. (55), eff. 11−15−92; (39m) renum. from NR 405.02 (14) and am., cr. (43e) and (53m), r. (53e), r. and recr. (55), am. (100), Register, May, 1993, No. 449, eff. 6−1−93; cr. (1), (1j), (26e) and (91), (59m) renum. from NR 101.03 (13) and am., Register, June, 1993, No. 450, eff. 7−1−93; cr. (1b), (1e), (1m), (1q), (8m), (11q), (28m), (30), (36), (43b), (53e), (68m), (71) and (80e), am. (53m), Register, December, 1993, No. 456, eff. 1−1−94; cr. (1k), (1L), (17s), (21c), (21k), (26s), (40e), (47m), (51m), (60e), (60i), (69s), (81m), (96m) and (98s), Register, June, 1994, No. 462, eff. 7−1−94; cr. (98g), Register, December, 1994, No. 468, eff. 1−1−95; am. (43e), (47m), (51m), (77), (80) and (91), Register, February, 1995, No. 470, eff. 3−1−95; renum. (1) to (1a), renum. (1), (1c), (1v) from NR 407.02 (1), (2), (4), am. (1b), (1q), (39m), r. (11m), (15), (16e), (21), (36), (49), (74), cr. (22e), (22m), (40m), (40s), (41m), (57m), Register, April, 1995, No. 472, eff. 5−1−95; cr. (18m), (22s), (97m) and (101), am. (47) and (54), Register, June, 1995, No. 474, eff. 7−1−95; am. (98), Register, August, 1995, No. 476, eff. 9−1−95; am. (41), (77), (79) and (90), (53p) renum. from NR 411.02 (6), r. (60m), (60m) renum. from NR 440.02 (21), renum. (100) (u) to be (100) (w), cr. (100) (u) and (v), Register, December, 1995, No. 480, eff. 1−1−96; am. (43e), (80e) (a) (intro.), renum. (100) (w) to be (100) (x), cr. (100) (w), Register, June, 1996, No. 486, eff. 7−1−96; am. (39m), Register, December, 1996, No. 492, eff. 1−1−97; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, December, 1996, No. 492; am. (43c) and (43d), renum. s. NR 423.02 (3) (3m), (4) and (8) to be s. NR 400.02 (22v), (26o) (26q) and (60s), Register, March, 1997, No. 495, eff. 4−1−97; renum. (43b) to be (43a), cr. (43b), Register, December, 1997, No. 504, eff. 1−1−98; renum. (1a) to (99), (100) (intro.) and (a) to (x) and (101) to be (2) to (162) (intro.) and (a) to (t) and (163) and am. and renumbered, (40), (55), (70), (77), (122), (124), (126), (131) and (139), cr. (74), (78), (87), (162) (x), (xa), (xb), (xc), (xd), (xe), (xf), (xg), (xh), (xi), (xj), (xk), (xL), (xm), (xn), (xo), (xp), (xq), (xr) and (y), am. (3), Register, October, 1999, No. 526, eff. 11−1−99; cr. (36m), Register, August, 2000, No. 536, eff. 9−1−00; cr. (45m), Register, January, 2001, No. 541, eff. 2−1−01; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, January, 2001, No. 541; CR 02−146: am. (40), (70), (79) and (135) Register October 2003 No. 574, eff. 11−1−03; CR 02−097: am. (95), cr. (162) (wm), renum. NR 445.02 (1) to be NR 400.02 (27m) Register June 2004 No. 582, eff. 7−1−04; CR 01−081: am (64) Register September 2004 No. 585, eff 10−1−04; CR 03−066: renum. NR 404.02 (2) to be (19m) Register May 2005 No. 593, eff. 6−1−05; CR 04−107: cr. (73m) and (131m) Register August 2005 No. 596, eff. 9−1−05; CR 04−106: am (64) Register November 2005 No. 599, eff. 12−1−05; CR 05−055: renum. (162) (a) to be (a) 1., cr. (162) (a) (intro.) and 45. to 48. and (162) (b), renum. (162) (b) to (y) to be (162) (a) 2. to 44. and am. 40. and 42., renum. (162) (z) to be (162) (a) 49. Register December 2005 No. 600, eff. 1−1−06; CR 07−040: renum. (162) (a) 49. to be (162) (a) 50., cr. (162) (a) 49. Register April 2008 No. 628, eff. 5−1−08; CR 10−012: cr. (162) (a) 51. and 52. Register September 2010 No. 657, eff. 10−1−10; CR 10−048: cr. (66m) Register November 2010 No. 659. eff. 12−1−10; CR 10−050: (123e), (123s) renum. from NR 404.02 (4e), (4m) and am., am. (40), (70), (79), (135), cr. (123m) Register November 2010 No. 659, eff. 12−1−10; EmR1046: emerg. cr. (74m), eff. 12−15−10; CR 10−144: cr. (74m) Register August 2011 No. 668, eff. 9−1−11; CR 11−005: cr. (26m), (54m), (85m), (93m), (107m), (133e), (133m), (133s) renum. from 423.02 (1), (8), (8L), (8t), (9c), (9n), (9r) Register January 2012 No. 673, eff. 2−1−12; correction in (64) made under s. 13.92 (4) (b) 7., Stats., Register March 2012 No. 675; CR 13−070: r. (101), (106), am. (123m), (124) Register July 2014 No. 703, eff. 8−1−14; CR 15−005: r. (56), cr. (136m) Register November 2015 No. 719, eff. 12−1−15; CR 15−077: cr. (162) (a) 53. to 60. Register July 2016 No. 727, eff. 8−1−16; CR 19−015: am. (130), (136m) (intro.), (b), cr. (136r), (162) (a) 61., 62. September 2020 No. 777, eff. 10−1−20; CR 20−088: cr. (intro.) Register May 2022 No. 797, eff. 6−1−22.

NR 400.03 Units and abbreviations. Abbreviations and symbols of units of measure used in chs. NR 400 to 499 are defined as follows:

(1) System international (SI) units of measure:

(a) "A" — ampere

(am) "g" — gram

(b) "Hz" — hertz

(bm) "J" — joule

(c) "K" — degree Kelvin

(cm) "kg" — kilogram

(d) "kPa" — kilo pascal (1.0 kPa = 0.15 psia)

(dm) "m" — meter

(e) "m^{2}" — square meter

(em) "m^{3}" — cubic meter

(f) "mg" — milligram—10^{-3} gram

(fm) "Mg" — megagram—10^{6} gram

(g) "mm" — millimeter—10^{-3} meter

(gm) "mol" — mole

(h) "MW" — megawatt

(hm) "MWe" — megawatt electrical

(i) "N" — newton

(im) "ng" — nanogram—10^{-9} gram

(j) "nm" — nanometer—10^{-9} meter

(jm) "Pa" — pascal

(k) "s" — second

(km) "V" — volt

(L) "W" — watt

(Lm) "µg" — microgram—10^{-6} gram

(m) "Ω" — ohm

(2) Other units of measure:

(a) "Btu" — British thermal unit

(am) "°C" — degree Celsius (centigrade)

(b) "cc" — cubic centimeters

(bm) "cfm" — cubic feet per minute

(c) "Ci" — curie

(cm) "d" — day

(d) "dcf" — dry cubic feet

(dm) "dcm" — dry cubic meters

(e) "dscf" — dry cubic feet at standard conditions

(em) "dscm" — dry cubic meters at standard conditions

(f) "eq" — equivalent

(fm) "°F" — degree Fahrenheit
(g) "ft" — foot
(gm) "ft^2" — square feet
(h) "ft^3" — cubic feet
(hm) "gal" — gallon
(i) "gr" — grain
(im) "hr" — hour
(j) "in" or ″ — inch
(jm) "in Hg" — inches of mercury
(k) "in H_2O" — inches of water
(km) "l" — liter
(L) "lb" — pound
(Lm) "lpm" — liter per minute
(m) "mil" — 10^{-3} in
(mm) "min" — minute
(n) "ml" — milliliter — 10^{-3} liter
(nm) "mmBtu" — million Btu
(ns) "MPH" — miles per hour
(o) "mrem" — millirem — 10^{-3} rem
(om) "oz" — ounce
(p) "pCi" — picocurie — 10^{-12} curie
(pm) "ppm" or "ppmv" — parts per million (by volume)
(q) "psia" — pounds per square inch absolute
(qm) "psig" — pounds per square inch gauge
(r) "°R" — degree Rankine
(rg) "tpy" — tons per year
(rm) "v/v" — volume per volume
(s) "yd^2" — square yards
(sm) "yr" — year
(t) "µl" — microliter—10^{-6} liter
(tm) "µm" — micrometer—10^{-6} meter (micron)

(3) Chemical nomenclature:

(a) "Be" — beryllium
(b) "CdS" — cadmium sulfide
(c) "CO" — carbon monoxide
(d) "CO_2" — carbon dioxide
(e) "HCl" — hydrochloric acid
(f) "Hg" — mercury
(g) "H_2O" — water
(h) "H_2S" — hydrogen sulfide
(i) "H_2SO_4" — sulfuric acid
(j) "N_2" — nitrogen
(k) "NO" — nitric oxide
(L) "NO_2" — nitrogen dioxide
(m) "NO_x" — nitrogen oxides
(n) "O_2" — oxygen
(o) "Pb" — lead
(om) "SF_6" — sulfur hexafluoride
(p) "SO_2" — sulfur dioxide
(q) "SO_3" — sulfur trioxide
(r) "SO_x" — sulfur oxides

(4) Miscellaneous:

(a) "API" — American Petroleum Institute, 1220 L Street NW, Washington DC 20005
(am) "AQCR" — air quality control region
(b) "ASME" — American Society of Mechanical Engineers, 22 Law Drive, Fairfield, NJ 07007–2900
(bm) "ASTM" — American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959
(c) "avg" — average
(cm) "BACT" — best available control technology
(cs) "CAS no." — Chemical Abstracts Service registry number
(d) "CEM" — continuous emission monitor
(dg) "CERCLA" — federal comprehensive environmental response, compensation and liability act
(dm) "CFC" — chlorofluorocarbon
(e) "CFR" — code of federal regulations
(em) "DOE" — United States department of energy
(f) "EPA" — United States environmental protection agency
(fm) "FC" — fluorocarbon
(g) "FR" — federal register
(gm) "GACT" — generally available control technology
(go) "GHG" — greenhouse gases
(gs) "HAP" — hazardous air pollutant
(h) "HCFC" — hydrochlorofluorocarbon
(hm) "HFC" — hydrofluorocarbon
(i) "I.D." — inside diameter
(im) "LAER" — lowest achievable emission rate
(j) "MACT" — maximum achievable control technology
(jm) "MSDS" — material safety data sheet
(jp) "NAICS" — North American Industry Classification System
(js) "NESHAP" — national emission standards for hazardous air pollutants
(k) "O.D." — outside diameter
(ke) "OSHA" — United States occupational safety and health administration
(kg) "PFC" — perfluorocarbon
(ki) "$PM_{2.5}$" — particulate matter with an aerodynamic diameter $\leq$ 2.5 µm
(km) "PM_{10}" — particulate matter with an aerodynamic diameter$\leq$10 µm
(ks) "PSD" — prevention of significant deterioration
(L) "RACT" — reasonably available control technology
(Lm) "rpm" — revolutions per minute
(m) "SIC" — standard industrial classification
(mf) "SIP" — state implementation plan
(mm) "TRS" — total reduced sulfur
(n) "TSP" — total suspended particulates
(nm) "USC" — United States Code
(o) "VOC" — volatile organic compound
(om) "$\geq$" — greater than or equal to
(p) "$\leq$" — less than or equal to
(pm) "%" — percent
(q) "$\pm$" — plus or minus

History: Cr. Register, April, 1995, No. 472, eff. 5–1–95; am. (2), Register, December, 1995, No. 480, eff. 1–1–96; correction made under s. 13.93 (2m) (b) 1., Stats., Register, December, 1995, No. 480; cr. (4) (cs) and (gs), Register, March, 1997, No. 495, eff. 4–1–97; cr. (4) (ke), Register, September, 1997, No. 501, eff. 10–1–97; cr. (2) (ns), (rg), (4) (dg) and (ks), Register, October, 1999, No. 526, eff. 11–1–99; CR 05–040: cr. (4) (js) Register February 2006 No. 602, eff. 3–1–06; CR 10–050: cr. (4) (ki) Register November 2010 No. 659, eff. 12–1–10; EmR1046: emerg. cr. (3) (om), (4) (go), (kg), eff. 12–15–10; CR 10–144: cr. (3) (om), (4) (go), (kg) Register August 2011 No. 668, eff. 9–1–11; CR 21–072: cr. (4) (jp) Register July 2022 No. 799, eff. 8–1–22; **CR 23–017: cr. (4) (mf) Register March 2024 No. 819, eff. 4–1–24.**

Chapter NR 428

CONTROL OF NITROGEN COMPOUND EMISSIONS

Note: Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, December, 1996, No. 492. Corrections in NR 428.04 to 428.08 made under s. 13.93 (2m) (b) 7., Stats., Register, January, 2001, No. 541.

NR 428.01 Applicability; purpose.

(1) APPLICABILITY. This chapter applies to all air contaminant sources which emit nitrogen compounds and to their owners and operators. All references to the code of federal regulations in this chapter mean those parts or provisions as in effect on February 1, 2001, except that in the case of CFR appendices incorporated by reference in ch. NR 484, if a more recent date is specified in the applicable section of ch. NR 484, that date shall apply.

(2) PURPOSE. This chapter is adopted under ss. 285.11, 285.13 and 285.17, Stats., to categorize nitrogen compound air contaminant sources and to establish emission limitations and other requirements for these sources in order to protect air quality.

History: Cr. Register, September, 1986, No. 369, eff. 10–1–86; am. (1), Register, May, 1992, No. 437, eff. 6–1–92; am. Register, January, 2001, No. 541, eff. 2–1–01.

NR 428.02 Definitions.

The definitions contained in ch. NR 400 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

(1) "Biologically derived gaseous fuel" means a gaseous fuel resulting from biological processing of a carbon–based feedstock.

(1m) "Capacity factor" means one of the following:

(a) The ratio of a unit's actual electric output (expressed in MWe–hr) to the unit's nameplate capacity times the unit's potential hours of operation. The potential hours of operation on an annual basis are 8,760 hours, and on an ozone season basis are 3,672 hours.

(b) The ratio of a unit's heat input (in million Btu or equivalent units of measure) to the unit's maximum design heat input (in million Btu per hour or equivalent units of measure) times the unit's potential hours of operation.

(2) "Combined cycle system" means a system comprised of one or more combustion turbines, heat recovery steam generators and steam turbines configured to improve overall efficiency of electricity generation or steam production.

(3) "Combustion controls" has the meaning given in s. NR 409.02 (21m).

(4) "Combustion optimization" means those activities necessary to maximize combustion efficiency while minimizing NO_x emissions, including but not limited to the following: burner adjustments, fuel conditioning, fuel flow improvements, furnace design modifications and the application of combustion controls.

(5) "Combustion turbine" means an enclosed fossil or other fuel–fired device that is comprised of 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.

(6) "Commencement of operation" means the beginning of any mechanical, chemical or electronic process, including, with regard to a unit, startup of a unit's combustion chamber.

(6m) "Integrated gasification process" means a high temperature process in which gaseous fuel is produced onsite from a carbon–based feedstock.

(7) "Kraft recovery boiler" means "recovery furnace", as defined in s. NR 440.45 (2) (L).

(7e) "Maximum theoretical emissions" means the quantity of NO_x emissions that theoretically could be emitted by a stationary source without consideration of control devices based on the design capacity or maximum production capacity of the source and 8,760 hours of operation per year. When appropriate, and upon request by the source owner or operator, maximum theoretical emissions may be limited by the imposition of conditions in a federally enforceable permit. The conditions shall be used in place of design capacity or maximum production capacity in calculating the maximum theoretical emissions for the source and may include, among other things, the establishment of production limitations, capacity limitations, or limitations on the hours of operation of any emission source, or a combination of any limitations. Production or capacity limitations shall be established on the basis of no longer than one month and may allow for averaging for up to 12 consecutive months.

(7i) "Primary fuel" means the fuel types that provide the greatest amount of heat input, in terms of mmBtu, to a combustion unit. A combustion unit may have more than one primary fuel.

(7m) "Process heater" means an enclosed device using controlled flame, that is not a boiler, and that has a primary purpose to transfer heat indirectly to a process material or to a heat transfer material for use in a process unit, instead of generating steam. Process heaters may not include combustion equipment where the material being heated is in direct contact with the products of combustion, such as furnaces or kilns, any unfired waste heat recovery heater or units used for comfort heat or space heat, food preparation for onsite consumption, or autoclaves.

(7p) "Secondary fuel" means any fuel that is not a primary fuel.

(7u) "Simple cycle stationary combustion turbine" means any stationary combustion turbine that does not recover heat from the stationary combustion turbine exhaust gases.

(7w) (a) "Supply interruption" or "curtailment" means a period of time during which the supply of primary fuel to an emissions unit is reduced for reasons beyond the control of the facility.

(b) "Supply interruption" or "curtailment" may not result from an increase in the cost or unit price of the primary fuel.

(8) "Unit" means a solid fuel–fired or fossil fuel–fired combustion device.

History: Cr. (intro.), renum. from NR 154.01 (122), Register, September, 1986, No. 369, eff. 10–1–86; am. (intro.), r. (1), Register, June, 1993, No. 450, eff. 7–1–93; am. (intro.), cr. (1) to (8), Register, January, 2001, No. 541, eff. 2–1–01; CR 02–076: cr. (6m) Register November 2002 No. 563, eff. 12–1–02; CR 03–049: renum. (1) to be (1m), cr. (1) Register December 2003 No. 576, eff. 1–1–04; CR 07–016: cr. (7m) Register July 2007 No. 619, eff. 8–1–07; CR 08–103: cr. (7e) Register August 2009 No. 644, eff. 9–1–09; **CR 23–017: cr. (7i), (7p), (7u), (7w) Register March 2024 No. 819, eff. 4–1–24.**

NR 428.03 General limitations. No person may cause, allow or permit nitrogen oxides or nitrogen compounds to be emitted to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution.

History: Renum. from NR 154.15 (1), Register, September, 1986, No. 369, eff. 10–1–86; am. Register, May, 1992, No. 437, eff. 6–1–92.

Subchapter I — NO_x Emissions Performance Program General Provisions

NR 428.04 Requirements and performance standards for new or modified sources. (1) APPLICABILITY. The requirements of this section apply to emissions units described in this section that are located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington or Waukesha and that are constructed or that undergo a major modification, as that term is described in ch. NR 405 or 408, after February 1, 2001. When determining whether an emissions unit undergoes a major modification for purposes of this section, any increase in CO emissions resulting from the operation of the emissions unit, or operation of NO_x emissions control equipment for purposes of meeting state or federal NO_x emission requirements, will not be considered in the emissions calculations.

(2) PERFORMANCE STANDARDS. (a) *Boilers*. 1. Solid fuel–fired units. No person may cause, allow or permit nitrogen oxides to be emitted from a solid fuel–fired boiler in amounts greater than those specified in this subdivision.

a. 0.15 pound per million Btu of heat input on a 30–day rolling average basis for boilers with a maximum design heat input of 250 million Btu per hour or greater.

b. 0.20 pound per million Btu of heat input on a 30–day rolling average basis for boilers with a maximum design heat input of less than 250 million Btu per hour.

2. Gaseous fuel–fired units. No person may cause, allow or permit nitrogen oxides to be emitted from a gaseous fuel–fired boiler with a maximum design heat input of 25 million Btu per hour or greater in an amount greater than 0.05 pound per million Btu of heat input on a 30–day rolling average basis.

3. Distillate fuel oil–fired boilers. No person may cause, allow or permit nitrogen oxides to be emitted from a distillate fuel oil–fired boiler with a maximum design heat input of 25 million Btu per hour or greater in an amount greater than 0.09 pound per million Btu of heat input on a 30–day rolling average basis.

4. Residual fuel oil–fired boilers. No person may cause, allow or permit nitrogen oxides to be emitted from a residual fuel oil–fired boiler with a maximum design heat input of 25 million Btu per hour or greater in an amount greater than 0.15 pound per million Btu of heat input on a 30–day rolling average basis.

5. Kraft recovery boilers. No person may cause, allow or permit nitrogen oxides to be emitted from a kraft recovery boiler with a maximum design heat input of 50 million Btu per hour or greater in an amount greater than 0.10 pound per million Btu of heat input on a 30–day rolling average basis.

(b) *Cement kilns, lime kilns and calciners.* No person may cause, allow or permit nitrogen oxides to be emitted from a cement kiln, lime kiln or calciner with a maximum design heat input of 50 million Btu per hour or greater in amounts greater than those specified in this paragraph.

1. 0.10 pound per million Btu on a 30–day rolling average basis when burning gaseous fuel.

2. 0.12 pound per million Btu on a 30–day rolling average basis when burning distillate fuel oil.

3. 0.20 pound per million Btu on a 30–day rolling average basis when burning residual fuel oil.

4. 0.60 pound per million Btu on a 30–day rolling average basis when burning solid fuel.

(c) *Reheat, annealing and galvanizing furnaces.* No person may cause, allow or permit nitrogen oxides to be emitted from a reheat furnace, annealing furnace or galvanizing furnace with a maximum design heat input of 50 million Btu per hour or greater in an amount greater than 0.10 pound per million Btu on a 30–day rolling average basis.

(d) *Glass furnaces.* No person may cause, allow or permit nitrogen oxides to be emitted from a glass furnace with a maximum design heat input of 50 million Btu per hour or greater in an amount greater than 4.0 pounds per ton of pulled glass on a 30–day rolling average basis.

(e) *Asphalt plants.* No person may cause, allow or permit nitrogen oxides to be emitted from an asphalt plant with a maximum design heat input of 50 million Btu per hour or greater in amounts greater than those specified in this paragraph.

1. 0.15 pound per million Btu of heat input on a 30–day rolling average basis when burning gaseous fuel.

2. 0.20 pound per million Btu of heat input on a 30–day rolling average basis when burning distillate fuel oil.

3. 0.27 pound per million Btu of heat input on a 30–day rolling average basis when burning residual fuel oil or waste oil.

(f) *Process heating units.* No person may cause, allow or permit nitrogen oxides to be emitted from a process heater, dryer, oven or other external combustion unit with a maximum design heat input of 50 million Btu per hour or greater in amounts greater than those specified in this paragraph.

1. 0.10 pound per million Btu of heat input on a 30–day rolling average basis when burning gaseous fuel.

2. 0.12 pound per million Btu of heat input on a 30–day rolling average basis when burning distillate fuel oil.

(g) *Combustion turbines.* 1. Gaseous fuel–fired units. Except as provided in subds. 3. and 4., no person may cause, allow or permit nitrogen oxides to be emitted from a gaseous fuel–fired combustion turbine in amounts greater than those specified in this subdivision.

a. 12 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a simple cycle combustion turbine with a maximum design power output of 85 MWe or greater.

b. 9 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a simple cycle combustion turbine with a maximum design power output of 40 MWe or greater but less than 85 MWe.

c. 25 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a simple cycle combustion turbine with a maximum design power output of less than 40 MWe.

d. 9 parts per million dry volume (ppmdv), corrected to 15 percent oxygen, on a 30–day rolling average basis for a combined cycle combustion turbine with a maximum design power output of 25 MWe or greater.

e. 14 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a combined cycle combustion turbine with a maximum design power output of less than 25 MWe.

2. Distillate fuel oil–fired units. No person may cause, allow or permit nitrogen oxides to be emitted from a distillate fuel oil–fired combustion turbine in amounts greater than those specified in this subdivision.

a. 25 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a simple cycle combustion turbine with a maximum design power output of 85 MWe or greater.

b. 25 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a simple cycle combustion turbine with a maximum design power output of 40 MWe or greater but less than 85 MWe.

c. 65 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a simple cycle combustion turbine with a maximum design power output of less than 40 MWe.

d. 8 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a combined cycle combustion turbine with a maximum design power output of 25 MWe or greater.

e. 25 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a combined cycle combustion turbine with a maximum design power output of less than 25 MWe.

3. Units fired by an integrated gasification process. No person may cause, allow or permit nitrogen oxides to be emitted from a combined cycle combustion turbine that is fired by fuel derived from an integrated gasification process in amounts greater than 15 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis.

4. Units fired by a biologically derived gaseous fuel. No person may cause, allow or permit nitrogen oxides to be emitted from a biologically derived gaseous fuel fired combustion turbine in amounts greater than those specified in this subdivision.

a. 35 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a simple cycle combustion turbine.

b. 35 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for a combined cycle combustion turbine.

(h) *Reciprocating engines.* No person may cause, allow or permit nitrogen oxides to be emitted from a reciprocating engine in amounts greater than those specified in this paragraph.

1. 6.9 grams per brake horsepower–hour for a compression ignition unit with a maximum design power output of 1000 hp or greater.

2. 4.0 grams per brake horsepower–hour for a spark ignition unit with a maximum design power output of 1000 hp or greater.

(i) *Emissions units using secondary fuel.* An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(3) MONITORING REQUIREMENTS. (a) *General requirements*. 1. The owner or operator of each NO_x emissions unit subject to the requirements of sub. (2) shall comply with the monitoring requirements of subch. III.

2. The emissions measurements recorded and reported in accordance with subch. III shall be used to determine compliance by the unit with the applicable NO_x emissions performance standard under sub. (2).

(b) *Specific requirements.* The owner or operator of each NO_x emissions unit subject to the requirements of sub. (2) shall determine the unit's average NO_x emission rate using methods and procedures specified in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 484.04 (21), or other emissions monitoring methods approved by the department.

(4) RECORDKEEPING AND REPORTING REQUIREMENTS. (a) Except as provided in subd. 1., the owner or operator of each NO_x emissions unit subject to the requirements of this section shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created.

1. All emissions monitoring information, in accordance with subch. III; except that, to the extent that subch. III provides for a 3–year period for record retention, the 3–year period shall apply.

2. Copies of all reports, compliance certifications and other submissions and all records made or required under the NO_x emissions performance program.

(b) The owner or operator of the NO_x emissions source shall submit the compliance reports and certifications required under the NO_x emissions performance program in conjunction with those required under the construction permit requirements of ch. NR 406 and the operation permit requirements of s. NR 407.09.

(c) The owner or operator claiming exemption from the requirements under sub. (2) pursuant to sub. (2) (i) shall keep a record of all of the following:

1. Each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

2. The reason for each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

3. The monthly and yearly total hours for each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

4. Other relevant information as required by the department.

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01; CR 02–076: cr. (2) (g) 3. Register November 2002 No. 563, eff. 12–1–02; CR 03–049: am. (2) (g) 1., cr. (2) (g) 4. Register December 2003 No. 576, eff. 1–1–04; CR 07–016: am. (2) (h) 1. and 2. Register July 2007 No. 619, eff. 8–1–07; CR 08–103: am. (1) and (3) (b) Register August 2009 No. 644, eff. 9–1–09; **CR 23–017: am. (2) (g) 1. d., cr. (2) (i), (4) (c) Register March 2024 No. 819, eff. 4–1–24.**

NR 428.05 Requirements and performance standards for existing sources.

(1) APPLICABILITY. The requirements of this section apply to emissions units described in this section that are located in the county of Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha and that were initially constructed on or before February 1, 2001.

(2) NO_X EMISSIONS OPTIMIZATION. (a) The requirements of this subsection do not apply to emissions units which are subject to the emission limits of sub. (3).

(b) Except as provided under par. (a), (c), or (f) the following categories of NOx emissions units listed under this subsection shall complete a combustion optimization to minimize NOx emissions in accordance with s. NR 439.096 by December 31, 2002:

1. Solid fuel–fired boilers with a maximum design heat input of 75 million Btu per hour or greater and operated during the 2000

ozone season or a later ozone season with a capacity factor of at least 20%.

2. Natural gas–fired boilers with a maximum design heat input of 75 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 20%.

3. Distillate or residual fuel oil–fired boilers with a maximum design heat input of 75 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 20%.

4. Cement kilns, lime kilns and calciners with a maximum design heat input of 75 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 20%.

5. Reheat furnaces, annealing furnaces and galvanizing furnaces with a maximum design heat input of 75 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 20%.

6. Glass manufacturing furnaces with a maximum design heat input of 75 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 20%.

(c) An emissions unit described in par. (b) which first operates with a capacity factor exceeding 20% in an ozone season after the 2000 ozone season shall complete a combustion optimization by December 31 of the calendar year following that ozone season.

(d) The owner or operator of an NO_x emissions unit subject to a combustion optimization requirement under par. (b) shall operate the emissions unit in a manner consistent with the results of the combustion optimization.

(e) The owner or operator of a source subject to the NO_x emissions optimization requirements of this subsection shall perform monitoring sufficient to determine compliance with the requirements of this subsection. The monitoring required under this paragraph shall be either continuous monitoring of NO_x emissions or periodic monitoring of parameters adequate to ascertain the quality of the combustion and shall conform to the source's approved combustion optimization plan pursuant to s. NR 439.096.

(f) An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(3) PERFORMANCE STANDARDS. (a) *Utility boilers.* No person may cause, allow or permit nitrogen oxides to be emitted from a boiler owned or operated by a utility as defined in s. NR 409.02 (84) with a maximum design heat input of 500 million Btu per hour or greater in excess of the most stringent of the following limits, as applicable, during the ozone season:

1. 0.33 pound per million Btu of heat input on a 30–day rolling average basis, on or after December 31, 2002.

2. 0.31 pound per million Btu of heat input on a 30–day rolling average basis, on or after December 31, 2003.

3. 0.30 pound per million Btu of heat input on a 30–day rolling average basis, on or after December 31, 2004.

4. 0.29 pound per million Btu of heat input on a 30–day rolling average basis, on or after December 31, 2005.

5. 0.29 pound per million Btu of heat input on a 30–day rolling average basis, on or after December 31, 2006.

6. 0.28 pound per million Btu of heat input on a 30–day rolling average basis, on or after December 31, 2007.

(b) *Other boilers.* The requirements of this paragraph apply to boilers which are not subject to the emission limits of par. (a).

1. Solid fuel–fired units. On or after December 31, 2002, no person may cause, allow or permit nitrogen oxides to be emitted from a solid fuel–fired boiler, with a maximum design heat input of 100 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 25%, in excess of the following limits during the ozone season:

a. 0.45 pound per million Btu of heat input on a 30–day rolling average basis for cyclone–fired boilers.

b. 0.20 pound per million Btu of heat input on a 30–day rolling average basis for fluidized bed combustion boilers.

d. 0.30 pound per million Btu of heat input on a 30–day rolling average basis for pulverized coal–fired boilers.

2. Gaseous fuel–fired units. On or after December 31, 2002, no person may cause, allow or permit nitrogen oxides to be emitted from a gaseous fuel–fired boiler, with a maximum design heat input of 100 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 25%, in excess of 0.10 pound per million Btu of heat input on a 30–day rolling average basis during the ozone season.

3. Distillate fuel oil–fired units. On or after December 31, 2002, no person may cause, allow or permit nitrogen oxides to be emitted from a distillate fuel oil–fired boiler, with a maximum design heat input of 100 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 25%, in excess of 0.12 pound per million Btu of heat input on a 30–day rolling average basis during the ozone season.

4. Residual fuel oil–fired units. On or after December 31, 2002, no person may cause, allow or permit nitrogen oxides to be emitted from a residual fuel oil–fired boiler, with a maximum design heat input of 100 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 25%, in excess of 0.20 pound per million Btu of heat input on a 30–day rolling average basis during the ozone season.

(c) *Reheat, annealing and galvanizing furnaces.* On or after December 31, 2002, no person may cause, allow or permit nitrogen oxides to be emitted from a reheat furnace, annealing furnace or galvanizing furnace with a maximum design heat input of 100 million Btu per hour or greater and operated during the 2000 ozone season or a later ozone season with a capacity factor of at least 25%, in excess of 0.10 pound per million Btu heat input on a 30–day rolling average basis during the ozone season.

(d) *Combustion turbines.* On or after December 31, 2002, no person may cause, allow or permit nitrogen oxides to be emitted from a combustion turbine with a maximum design power output of 50 MWe or greater in an amount greater than the following during the ozone season:

1. Gaseous fuel–fired units. 75 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average for units burning gaseous fuel.

2. Distillate fuel oil–fired units. 110 parts per million dry volume (ppmdv), corrected to 15% oxygen, on a 30–day rolling average basis for units burning distillate fuel oil.

(e) *Reciprocating engines.* On or after December 31, 2002, no person may cause, allow or permit nitrogen oxides to be emitted

during the ozone season from reciprocating engines with a maximum design power output of 2000 hp or greater in excess of the following limits:

1. 9.5 grams per brake horsepower–hour for rich–burn units.

2. 10.0 grams per brake horsepower–hour for lean–burn units.

3. 8.5 grams per brake horsepower–hour for distillate fuel oil–fired units.

4. 6.0 grams per brake horsepower–hour for dual–fuel units.

(f) *Emissions units using secondary fuel.* An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(4) MONITORING REQUIREMENTS. (a) *General requirements.* 1. The owner or operator of each NO_x emissions unit subject to the requirements of sub. (3) shall comply with the monitoring requirements of subch. III.

2. The emissions measurements recorded and reported in accordance with subch. III shall be used to determine compliance by the unit with the NO_x emissions performance standard under sub. (3).

(b) *Specific requirements.* 1. The owner or operator of an emissions unit subject to the requirements of sub. (3) (a) shall determine the average NO_x emission rate, in pound per million Btu, using the methods and procedures specified in 40 CFR part 75, Appendices A through I, incorporated by reference in s. NR 484.04 (27).

2. The owner or operator of an emissions unit subject to any of the requirements of sub. (3) (b) to (e) shall determine the unit's average NO_x emission rate using methods and procedures specified in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 484.04 (21), or other emissions monitoring methods approved by the department.

(5) RECORDKEEPING AND REPORTING REQUIREMENTS. (a) Unless otherwise provided, the owner or operator of each NO_x emissions unit subject to the requirements of this section shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created:

1. All emissions monitoring information, in accordance with subch. III; except that, to the extent that subch. III provides for a 3–year period for record retention, the 3–year period shall apply.

2. Copies of all reports, compliance certifications and other submissions and all records made or required under the NO_x emissions performance program.

(b) The owner or operator of the NO_x emissions source shall submit the compliance reports and certifications required under the NO_x emissions performance program in conjunction with those required under the operation permit requirements of s. NR 407.09.

(c) The owner or operator claiming exemption to the requirements under subs. (2) and (3) pursuant to subs. (2) (f) and (3) (f) shall keep a record of all of the following:

1. Each occurrence when the fuel denoted under subs. (2) (f) and (3) (f) was burned.

2. The reason for each occurrence when fuel denoted under subs. (2) (f) and (3) (f) was burned.

3. The monthly and yearly total hours of operation for each fuel used as specified under subs. (2) (f) and (3) (f).

4. Other relevant information as required by the department.

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01; CR 07–016: am. (3) (e) 1. to 4. Register July 2007 No. 619, eff. 8–1–07; CR 08–103: am. (1) and (4) (b) 2. Register August 2009 No. 644, eff. 9–1–09; **CR 23–017: am. (2) (b), cr. (2) (f), (3) (f), (5) (c) Register March 2024 No. 819, eff. 4–1–24.**

NR 428.055 Alternatives. (1) ALTERNATIVE AUTHORITY. The owner or operator of a NOx emissions source may submit a request to the department requesting approval to establish an alternative site–specific emission limitation to one or more of the requirements under s. NR 428.04 or 428.05. The owner or operator shall demonstrate that compliance with requirements under s. NR 428.04 or 428.05 are technologically or economically infeasible. Application for an alternative to any emission limitation under this subchapter does not become effective until approved by the department and the administrator as a site–specific SIP revision and shall be subject to requirements under subs. (2) to (5).

(2) ALTERNATIVE CRITERIA. The department may not approve an alternative site–specific emission limitation under sub. (1) unless:

(a) The alternative will not delay attainment or prevent maintenance of any ambient air quality standard, as determined by methods acceptable to the department.

(b) The owner or operator of the air contaminant source for which an alternative is requested demonstrates that all other direct or portable sources that it owns or operates in the state are in compliance with all applicable requirements under chs. NR 400 to 499 or are on a schedule for compliance with the requirements.

(c) The owner or operator submits to the department information concerning the conditions or special circumstances that demonstrate, to the department's satisfaction, that the applicable requirements from which variance is sought are technologically or economically infeasible. In addition, all of the following conditions are applicable:

1. The owner or operator shall submit proposed emission limitations to the department in writing.

2. The responsible official shall sign the request for alternatives on behalf of the owner or operator.

3. The owner or operator shall submit other relevant information as required by the department.

(3) PROCEDURES FOR ISSUANCE OF ALTERNATIVES. The department, in acting upon any request for an alternative site–specific emission limitation under this section, shall do all of the following:

(a) Act on requests for alternatives within 3 months of the filing of a completed request.

(b) Offer, through public notice, the opportunity for public comments including, where requested, a public hearing.

(c) State in writing the reasons for denying, granting, or for granting in modified form any request.

(4) REVOCATION AND MODIFICATION OF ALTERNATIVES. The department may, after notice and opportunity for hearing, revoke or modify any alternative site–specific emission limitation when any of the following occurs:

(a) Any term or condition of the alternative has been violated.

(b) Changes in ambient air quality indicate that the source has a significant adverse impact as determined by methods acceptable

to the department on the attainment or maintenance of any ambient air quality standard.

(c) The owner or operator did not act in good faith in demonstrating the technological or economic infeasibility of compliance with the limitations or in submitting other relevant information in support of the alternative request.

(5) EFFECTIVE DATE OF ALTERNATIVES. When the department grants, modifies, or revokes a site−specific alternative to a limitation that has been approved by the administrator as part of the SIP, the alternative will not become effective until all of the following conditions have been met:

(a) The department has submitted the alternative to the administrator pursuant to applicable law, including 42 USC 7410 and 40 CFR parts 51 and 52, and all such requirements have been met.

(b) The alternative has been approved by the administrator as a site−specific SIP revision.

History: CR 23–017: cr. Register March 2024 No. 819, eff. 4–1–24.

Subchapter II — NO_x Emissions Performance Program Compliance Provisions

NR 428.06 Determination of compliance. (1) EMISSIONS UNIT COMPLIANCE. Except as provided in sub. (2), each emissions unit subject to the requirements of s. NR 428.04 (2) or 428.05 (3) shall demonstrate compliance with the applicable performance standards under those provisions on a per unit basis.

(2) UNIT OZONE SEASON NO_X EMISSIONS AVERAGING PROGRAM. (a) Except as provided in par. (b), units subject to s. NR 428.05 (3) (a) may participate in an ozone season NO_x emission averaging program for purposes of demonstrating compliance with ozone season NO_x emission limitations in s. NR 428.05 (3) during the ozone seasons of calendar years 2003 and later.

(b) Excess NO_x emission reductions from emissions units subject to s. NR 428.05 that are used in an ozone season NO_x emissions averaging program under this subchapter may not be used for demonstrating compliance by an emissions unit with an NO_x emission limitation established under ch. NR 405 or 408 or s. NR 409.065 or 428.04.

(c) Excess NO_x emission reductions, for purposes of meeting the requirements of this subchapter, shall be emissions reductions beyond those required to meet all state and federal requirements. In addition, excess emission reductions shall be quantifiable through the monitoring requirements under ss. NR 428.05 and 428.07, and enforceable.

(3) AGGREGATE LIMIT ON OZONE SEASON EMISSIONS. All units participating in an ozone season NO_x emissions averaging program after December 31, 2007 shall be subject to an aggregate limit on the total tons of NO_x which may be emitted during the ozone season as determined under sub. (4) (e).

(4) PROSPECTIVE EMISSIONS AVERAGING PLAN. An owner or operator of an emissions unit who wishes to participate in an ozone season NO_x emissions averaging program shall submit a prospective emissions averaging plan to notify the department of all the owner's or operator's emissions units participating in an ozone season NO_x emissions averaging program. This plan shall establish compliance requirements for each unit and for all units in the aggregate with respect to emissions rate limitations and mass emissions limitations. The plan shall estimate each participating unit's anticipated operation to meet these requirements.

(a) *Plan submission*. The emissions averaging plan shall be submitted to the department no later than 90 days prior to the beginning of the ozone season covered by the plan. A revised plan may be submitted to the department no later than 30 days prior to the beginning of the ozone season covered by the plan.

(b) *Plan elements*. The emissions averaging plan shall include the following information for each emissions unit participating in the averaging program. All information shall be provided by applicable fuel category.

1. The responsible owners or operators.

2. The applicable ch. NR 428 emission limitation.

3. The projected ozone season heat input in million Btu or equivalent units.

4. The projected average NO_x emission rate, in pounds per million Btu or equivalent, and total mass emissions for the ozone season.

5. Information sufficient to determine the emission rate and mass emission limit and the alternative compliance limit required under par. (f) for each unit.

(c) *Units with multiple owners.* If an emissions unit has multiple owners, the unit's mass emissions and heat input may be allocated among the owners provided all mass emissions and the entire heat input of the unit are allocated. Alternatively, the operator of a unit with multiple owners shall be allocated all mass emissions and the entire heat input. Each owner may use his or her share of mass emissions and heat input in any ozone season NO_x emissions averaging plan. Each owner shall be the responsible party for compliance and liability for the owner's share of mass emissions and heat input for the requirements of this subchapter.

(d) *Plan emission rate limit*. 1. The emissions averaging plan shall establish an aggregate ozone season NO_x emission rate limit for all of the emissions units participating in the averaging program.

2. The aggregate ozone season NO_x emission rate limit is calculated as the heat input weighted aggregate of the individual unit's ozone season emission rate requirements less an environmental benefit factor of 0.01 pounds per million Btu or equivalent for each unit. This calculation is expressed as:

Plan Emission Rate = {Sum [Projected Unit Heat Input x (Unit Emission Rate Limit – 0.01)]} / (Sum of Projected Unit Heat Inputs)

(e) *Plan mass emission limitation*. 1. The emissions averaging plan shall establish an ozone season aggregate mass NO_x emission limitation for all of the units participating in an averaging program during any ozone season after December 31, 2007.

2. The aggregate mass emissions for all units that are eligible to participate in an emissions averaging plan may not exceed the combined allocation of all participating units' mass emissions limitation as determined under subd. 3.

3. Each unit participating in any ozone season NO_x emissions averaging plan shall have a mass emissions limitation equal to 15,912 tons multiplied by that unit's share of the average aggregate heat input of all eligible units of all owners determined by actual heat inputs for these units from the 1995, 1996 and 1997 ozone seasons as determined by the department.

4. If a unit eligible to participate in an ozone season NO_x emissions averaging plan is retired and replaced by another emissions unit at the same site, the mass emissions from the retired unit may still be used in a plan provided the replacement unit's mass emissions for that ozone season are subtracted from the retired unit's mass NO_x emissions limitation determined under subd. 3.

(f) *Unit alternative compliance limits*. 1. The emissions averaging plan shall establish an alternative compliance limit for each unit participating in the averaging program.

2. The unit alternative compliance limit in mass per million Btu shall be determined by dividing the unit's projected ozone season NO_x emissions by its projected ozone season heat input.

3. The plan shall provide calculations that demonstrate that the projected emissions units operations will not exceed the plan's emission rate and mass limit.

(g) *Plan review*. The emissions averaging plan shall be subject to department review and determination of completeness. The department shall make its determination of completeness and

inform the owner or operator of any additional information needed in the plan within 30 days of receipt.

(h) *Public notice*. 1. The owner or operator of any emissions unit participating in an emissions averaging plan shall provide public notice of that plan by publication in a local newspaper at least 60 days prior to the start of the ozone season to which the plan relates and shall provide copies of the plan upon request.

2. The notice shall indicate the purpose of the plan, the participating units and how to obtain a copy of the plan.

(i) *Compliance demonstration*. 1. The owners or operators of any emissions units participating in an emissions averaging plan shall submit a compliance report to the department not later than 60 days after the last day of the ozone season with information sufficient to demonstrate compliance with the plan's emission rate and mass emissions limit.

2. The compliance report shall provide, for each emissions unit, the heat input, NO_x emission rate and total NO_x mass emissions for the ozone season. The compliance report shall provide, in aggregate for all units participating in the emissions averaging plan, the ozone season NO_x mass emissions, heat input in million Btu or equivalent units, and the average emission rate. The aggregate ozone season NO_x emission rate shall be calculated as sum of the actual heat input of each unit times the individual unit's actual emission rate divided by the sum of the actual heat inputs of all units. This calculation is expressed as:

Aggregate average ozone season emission rate = [Sum (actual heat input by unit x actual emission rate by unit)] / (Sum of actual heat inputs)

3. Individual units may not be withdrawn from an ozone season NO_x emissions averaging plan unless it is demonstrated in the compliance report that the withdrawn units individually met their applicable s. NR 428.05 (3) emissions limitation requirements and the remaining units in the plan demonstrate compliance with an ozone season NO_x emissions averaging plan after excluding the withdrawn units.

4. If there is a successful demonstration of compliance with the plan's aggregate emissions rate limitation and with the plan's aggregate mass NO_x emissions limitation for the ozone season, all units in the averaging plan shall be deemed to be in compliance for that ozone season with each participating unit's alternative emissions rate limitation and heat input.

(j) *Violations and penalties*. 1. All emissions units participating in an ozone season NO_x emissions averaging program may be considered out of compliance if either the aggregate ozone season NO_x emission rate exceeds the emissions averaging plan's emission rate limitation or the aggregate mass NO_x emissions for the ozone season exceeds the plan's aggregate mass NO_x emissions limitation for the ozone season.

2. Each emissions unit is considered in violation for each day of non–compliance until corrective action is taken to reduce emissions and achieve compliance.

3. The department may require additional emission reductions if there are mass emissions exceeding the plan's limit on tons of mass emissions. The department may waive the additional emission reductions if, in consultation with the public service commission, the department determines that the excess emissions were the result of an extraordinary event and that the excess emissions were an unavoidable outcome of a necessary action taken by the source to maintain electric system reliability. Additional emission reductions shall be achieved within the subsequent 3 ozone seasons' allowable mass emission limit for all units participating in the emissions averaging plan. If there is no subsequent averaging plan for the source, the department may require a reduction in the source's emission rate that achieves an equivalent aggregate mass emission reduction.

4. All owners or operators of emissions units considered to be out of compliance with a plan emission rate limit or mass tons limit are liable for each violation and subject to enforcement and penalty provisions under ss. 285.83 and 285.87, Stats.

(k) *Monitoring requirements*. The total mass emissions and heat input shall be quantified by continuous emissions monitoring equipment and procedures required by ss. NR 428.05 (4) and 428.07.

(L) *Recordkeeping and reporting requirements*. Owners and operators shall comply with the recordkeeping and reporting requirements of s. NR 428.05 (5).

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01; CR 02–076: r. and recr. Register November 2002 No. 563, eff. 12–1–02; CR 03–049: am. (2) (a) Register December 2003 No. 576, eff. 1–1–04.

Subchapter III — NO_x Emissions Performance Program Monitoring And Reporting Provisions

NR 428.07 General requirements. Except as provided in s. NR 428.12, the owner or operator of an NO_x emissions unit subject to the requirements of subch. I shall comply with the monitoring and reporting requirements of this subchapter.

(1) REQUIREMENTS FOR MONITORING, INSTALLATION, CERTIFICATION AND DATA ACCOUNTING. (a) The owner or operator of an NO_x emissions unit shall submit to the department a monitoring plan that describes in detail the systems to be used on the unit to satisfy the monitoring requirements of this subchapter by the following deadlines:

1. For an emissions unit subject to emission limitations in s. NR 428.05 (3), by December 21, 2002.

2. For an emissions unit subject to emission limitations under s. NR 428.04 (2), at least 180 days prior to initial operation, or an alternative date approved by the department.

(b) The owner or operator of each NO_x emissions unit shall do all of the following:

1. Install all monitoring systems required under s. NR 428.08 for monitoring NO_x emissions. This includes all systems required to monitor NO_x emission rate, NO_x concentration, heat input and flow, in accordance with ss. NR 428.08 and 439.09.

2. Install all monitoring systems for monitoring heat input, if required under this chapter, for developing NO_x emission rate determinations expressed in pounds per million Btu.

3. Successfully complete all certification tests and meet all operating specifications of this subchapter and 40 CFR parts 60 and 75 as applicable to the monitoring systems required for an emissions unit under subds. 1. and 2.

4. Record and report data from the monitoring systems under subds. 1. and 2.

(2) COMPLIANCE DATES. The owner or operator shall meet the requirements of sub. (1) (b) 1. to 3. on or before the following dates and shall record and report data on and after the applicable listed date as follows:

(a) NO_x emissions units subject to the requirements of this subchapter that commence operation before February 1, 2001 shall comply with the requirements of this subchapter by December 31, 2002.

(b) NO_x emissions units subject to the requirements of this subchapter that commence operation on or after February 1, 2001 shall comply with the requirements of this subchapter by the later of the following dates:

1. December 31, 2002.

2. 180 days after the date on which the unit commences operation.

(c) However, if the applicable deadline under par. (b) does not occur during an ozone season, the deadline for compliance with the requirements of this subchapter becomes the May 1 immediately following the date determined in accordance with par. (b).

(d) 1. An NO_x emissions unit with a new stack or flue for which construction is completed after the applicable deadline under par. (a), (b) or (c) shall comply with the requirements of this

subchapter 90 days after the date on which emissions first exit through the new stack or flue.

2. However, if the unit reports on an ozone season basis and the applicable deadline under subd. 1. does not occur during the ozone season, the deadline for compliance with the requirements of this subchapter becomes the May 1 immediately following the date determined in accordance with subd. 1.

(3) REPORTING DATA PRIOR TO INITIAL CERTIFICATION. The owner or operator of an NO_x emissions unit under sub. (2) (b) or (c) shall determine, record and report NO_x emissions, heat input, if required for purposes of compliance, and any other values required to determine NO_x emissions, for example NO_x emission rate and heat input or NO_x concentration and stack flow, using the provisions of 40 CFR 75.70(g), from the date and hour that the unit starts operating until all required certification tests are successfully completed.

(4) PROHIBITIONS. (a) No owner or operator of an NO_x emissions unit may use any alternative monitoring system, alternative reference method or any other alternative for the required continuous emission monitoring system without having obtained prior written approval in accordance with s. NR 428.10.

(b) No owner or operator of an NO_x emissions unit may operate the unit so as to emit NO_x without accounting for all NO_x emissions in accordance with the applicable provisions of this subchapter.

(c) No owner or operator of an NO_x emissions unit may disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NO_x emissions, except for periods of recertification or periods when calibration, quality assurance testing or maintenance is performed in accordance with the applicable provisions of this subchapter.

(d) No owner or operator of an NO_x emissions unit may retire or permanently discontinue use of the continuous emission monitoring system, any component thereof or any other approved emission monitoring system under this subchapter, except under one of the following circumstances:

1. The unit is within a period during which it is covered by a retired unit exemption under s. NR 409.05 that is in effect.

2. The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this subchapter, by the department for use at that unit that provides emission data for the same pollutant or data for the same parameter as the retired or discontinued monitoring system.

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01; CR 08–103: am. (intro.), (1) (a), (b) 1., 3., (3) and (4) (c) Register August 2009 No. 644, eff. 9–1–09; **CR 23–017: am. (1) (a) 2. Register March 2024 No. 819, eff. 4–1–24.**

NR 428.08 Specific provisions for monitoring NO_x and heat input for the purpose of calculating NO_x emissions.

(1) UTILITY UNITS. This subsection applies to NO_x emissions units subject to the requirements of s. NR 428.05 (3) (a).

(a) *Coal–fired units.* The owner or operator of a coal–fired boiler shall do one of the following:

1. Meet the general operating requirements in 40 CFR 75.10 for an NO_x–diluent continuous emission monitoring system, consisting of an NO_x pollutant concentration monitor, an O_2– or CO_2–diluent gas monitor and a data acquisition and handling system, to measure NO_x emission rate, and for a flow monitoring system and an O_2– or CO_2–diluent gas monitor to measure heat input, except as provided in accordance with subpart E of 40 CFR part 75.

2. Meet the general operating requirements in 40 CFR 75.10 for an NO_x concentration monitoring system, consisting of an NO_x pollutant concentration monitor and a data acquisition and handling system, to measure NO_x concentration and for a flow monitoring system. In addition, if heat input is required to be reported under this chapter, the owner or operator also shall meet the general operating requirements for a flow monitoring system and an O_2– or CO_2–diluent gas monitor to measure heat input, or, if applicable, use the procedures in Appendix D to 40 CFR part 75, incorporated by reference in s. NR 484.04 (27). These requirements shall be met, except as provided in subpart E of 40 CFR part 75.

(b) *Moisture correction.* If a correction for the stack gas moisture content is needed to properly calculate the NO_x emission rate in pounds per million Btu, i.e., if the NO_x pollutant concentration monitor measures on a different moisture basis from the diluent monitor, or NO_x mass emissions in tons, i.e., if the NO_x concentration monitoring system or diluent monitor measures on a different moisture basis from the flow rate monitor, the owner or operator of a boiler shall account for the moisture content of the flue gas on a continuous basis in accordance with 40 CFR 75.11(b) except that the term "SO_2" shall be replaced by the term "NO_x".

(c) *Gaseous fuel–fired nonpeaking units or oil–fired nonpeaking units.* The owner or operator of a boiler or combustion turbine that, based on information submitted in the monitoring plan, qualifies as a gaseous fuel–fired or oil–fired unit but not as a peaking unit, as defined in 40 CFR 72.2, shall do one of the following:

1. Meet the requirements of par. (a) and, if applicable, par. (b).

2. Meet the general operating requirements in 40 CFR 75.10 for an NO_x–diluent continuous emission monitoring system, except as provided in accordance with 40 CFR part 75 Subpart E, and use the procedures specified in Appendix D to 40 CFR part 75, incorporated by reference in s. NR 484.04 (27), for determining hourly heat input.

(d) *Gaseous fuel–fired or oil–fired peaking units.* The owner or operator of a boiler or combustion turbine that qualifies as a peaking unit and as either gaseous fuel–fired or oil–fired, as defined in 40 CFR 72.2, based on information submitted in the monitoring plan, shall do one of the following:

1. Meet the requirements of par. (c).

2. Use the procedures in 40 CFR part 75 Appendix D, incorporated by reference in s. NR 484.04 (27), for determining hourly heat input and the procedures specified in 40 CFR part 75 Appendix E, incorporated by reference in s. NR 484.04 (27), for estimating the hourly NO_x emission rate. In addition, if after certification of an excepted monitoring system under 40 CFR part 75 Appendix E, a unit's operations exceed a capacity factor of 20.0% in any calendar year or exceed a capacity factor of 10.0% averaged over 3 years, the owner or operator shall meet the requirements of par. (c) or, if applicable, par. (e), by no later than December 31 of the following calendar year.

(e) *Other units.* The owner or operator of a boiler or combustion turbine that combusts wood, refuse or other materials shall comply with the monitoring provisions specified in par. (a) and, where applicable, par. (b).

(2) OTHER UNITS. This subsection applies to NO_x emissions units subject to the requirements of s. NR 428.04 (2) or 428.05 (3) (b) to (e).

(a) *Coal–fired units.* The owner or operator of a coal–fired boiler shall do one of the following:

1. Meet the general operating requirements in 40 CFR 60.13 for an NO_x–diluent continuous emission monitoring system, consisting of an NO_x pollutant concentration monitor, an O_2– or CO_2–diluent gas monitor, and a data acquisition and handling system, to measure NO_x emission rate, and for a flow monitoring system and an O_2– or CO_2–diluent gas monitor to measure heat input, except as provided in accordance with 40 CFR 60.13(i).

2. Meet the general operating requirements in 40 CFR 60.13 for an NO_x concentration monitoring system, consisting of an NO_x pollutant concentration monitor and a data acquisition and handling system, to measure NO_x concentration and for a flow monitoring system. In addition, if heat input is required to be reported under this chapter, the owner or operator also shall meet the general operating requirements for a flow monitoring system

and an O_2– or CO_2–diluent gas monitor to measure heat input, or, if applicable, use the procedures in Appendix E to 40 CFR part 75, incorporated by reference in s. NR 484.04 (27). These requirements shall be met, except as provided in 40 CFR 60.13(i).

(b) *Moisture correction.* If a correction for the stack gas moisture content is needed to properly calculate the NO_x emission rate in pounds per million Btu, i.e., if the NO_x pollutant concentration monitor measures on a different moisture basis from the diluent monitor, or NO_x mass emissions in tons, i.e., if the NO_x concentration monitoring system or diluent monitor measures on a different moisture basis from the flow rate monitor, the owner or operator of an NO_x emissions unit subject to the requirements of this subchapter shall account for the moisture content of the flue gas on a continuous basis in accordance with 40 CFR 75.11(b) except that the term "SO_2" shall be replaced by the term "NO_x".

(c) *Gaseous fuel–fired nonpeaking units or oil–fired nonpeaking units.* The owner or operator of a boiler or combustion turbine that, based on information submitted in the monitoring plan, qualifies as a gaseous fuel–fired or oil–fired unit but not as a peaking unit, as defined in 40 CFR 72.2, shall do one of the following:

1. Meet the requirements of par. (a) and, if applicable, par. (b).

2. Meet the general operating requirements in 40 CFR 60.13 for an NO_x–diluent continuous emission monitoring system, except as provided in accordance with 40 CFR 60.13(i), and use the procedures specified in Appendix D to 40 CFR part 75, incorporated by reference in s. NR 484.04 (27), for determining hourly heat input.

(d) *Gaseous fuel–fired or oil–fired peaking units.* The owner or operator of a boiler or combustion turbine that qualifies as a peaking unit and as either gaseous fuel–fired or oil–fired, as defined in 40 CFR 72.2, based on information submitted in the monitoring plan, shall do one of the following:

1. Meet the requirements of par. (c).

2. Use the procedures in 40 CFR part 75 Appendix D, incorporated by reference in s. NR 484.04 (27), for determining hourly heat input and the procedures specified in 40 CFR part 75 Appendix E, incorporated by reference in s. NR 484.04 (27), for estimating hourly NO_x emission rate. In addition, if after certification of an excepted monitoring system under 40 CFR part 75 Appendix E, a unit's operations exceed a capacity factor of 20.0% in any calendar year or exceed a capacity factor of 10.0% averaged over 3 years, the owner or operator shall meet the requirements of par. (c) or, if applicable, par. (e), by no later than December 31 of the following calendar year.

(e) *Boilers or turbines.* The owner or operator of a boiler or combustion turbine that combusts wood, refuse or other materials shall comply with the monitoring provisions specified in par. (a) and, where applicable, par. (b).

(f) *Continuous emissions monitoring.* An owner or operator of an emissions unit that installs and operates a continuous NO_x emissions monitoring system according to the requirements of 40 CFR part 75 satisfies requirements of this subsection.

(g) *Testing.* An owner or operator of an emissions unit not listed under pars. (a) to (e) shall either install and operate a continuous NOx emissions monitoring system according to the requirements under 40 CFR part 75, or do all of the following to satisfy the requirements under this subsection:

1. Keep and maintain the emissions unit manufacturer's specifications and emissions factor information for the emissions unit on–site and available for review.

2. Comply with any applicable standards under sections 111 or 112 of the Clean Air Act (42 USC 7411 or 7412).

3. Maintain the emissions unit in accordance with the manufacturer's operation and maintenance instructions.

4. Conduct an initial performance test within 180 days after initial operation and subsequent performance tests every 2 years thereafter, within 90 days of the anniversary date of the initial performance test, according to all of the following requirements, as applicable, to determine the emissions unit's NOx emissions rate for each fuel fired in the emissions unit:

a. The emissions performance test shall be conducted according to one of the following methods as applicable: Method 7, 7A, 7B, 7C, 7D, or 7E under 40 CFR part 60, Appendix A, incorporated by reference under s. NR 484.04 (15m) Table 2, or another method approved by the department in advance.

b. The initial emissions performance test shall include a determination of the capacity load point of the emissions unit's maximum NOx emissions rate based on one 30 minute test run at each capacity load point for which the unit is operated, other than for startup and shutdown, in the load ranges of 25 to 50 percent, 50 to 75 percent, and 75 to 100 percent, or other load ranges approved by or required by the department in advance.

c. The emissions performance test shall determine compliance based on the average of three test runs that are at least 60 minutes performed at the capacity load determined to have the maximum NOx emission rate under subd. 4. b.

d. An additional performance test shall be conducted according to subd. 4. b. within 90 days of completing a physical change in, or change in the method of operation that causes an increase of the hourly potential to emit of the NOx emissions rate.

e. A performance test is not required for a fuel used only for startup or for a fuel constituting less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(3) EXCEPTIONS. (a) In lieu of the exceptions under s. NR 439.075 (4), all of the following exceptions apply to the testing required under sub. (2) (g):

1. The department may grant a written waiver of a scheduled test if any of the following apply:

a. The direct stationary source associated with the emissions point subject to the testing requirement will be ceasing operation within one year of a scheduled test.

b. The most recently completed results from a test conducted according to the methods and procedures specified under s. NR 439.07 for the direct stationary source demonstrate that the emissions of the air contaminant for which compliance emissions testing is required under this section are 50 percent or less of the applicable emission limitation. If a waiver from a test is granted, the owner or operator shall then conduct the next test according to the schedule under sub. (2) (g) 4.

c. The direct stationary source associated with the emissions point subject to the testing requirement has not operated more than 360 hours in the 12–month period prior to the scheduled test date.

d. The most recently completed test, conducted according to the methods and procedures specified under s. NR 439.07, was conducted less than 12 months prior to the date that testing would be required under par. (b).

e. For each fuel used, the emissions unit is certified to meet emissions standards under 40 CFR part 60 that are equal to or more restrictive than the applicable emission limitation under s. NR 428.04 or 428.05, and the emissions unit is installed and configured according to the manufacturer's specifications.

f. The emissions unit is operated only to restart electric generation in the event of a complete loss of facility power.

g. The emissions unit is operated no more than 500 hours per year and no more than 200 hours during the ozone season, and its only purpose is to provide electricity to a facility if normal electricity service is interrupted or to replace normal critical operations at a facility.

h. The emissions unit's only function is to pump water in the case of a fire emergency.

i. The emissions unit utilization is less than 10 percent of its capacity factor on an annual average basis over a 3–year rolling period and less than 20 percent of its capacity factor in any year

of the 3–year rolling period and that is owned or operated by an electric generation utility or gas transmission utility.

j. The emissions unit is a research or development unit.

k. The emissions unit is an engine testing operation or process line.

L. The emissions unit is a gaseous fuel fired unit used to control VOC emissions from a commercial or industrial process.

2. The department may grant an extension of up to 180 days for compliance emissions testing if the owner or operator of a direct stationary source requests an extension, in writing, and can demonstrate that a representative emissions test cannot be performed within the time frame specified under sub. (2) (g) 4.

(b) The owner or operator shall submit a request for a waiver or extension under par. (a) 1. in writing for department review and approval at least 60 days prior to the required test date.

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01; CR 08–103: am. (title) and (2) (title), cr. (2) (f) Register August 2009 No. 644, eff. 9–1–09; **CR 23–017: r. and recr. (2) (e) (title), cr. (2) (f) (title), (g), (3) Register March 2024 No. 819, eff. 4–1–24.**

NR 428.09 Quarterly reports. The owner or operator of a unit subject to the NO_x requirements of this subchapter shall submit quarterly reports, as required under this section.

(1) UNITS SUBJECT TO AN ACID RAIN EMISSION LIMITATION. If a unit is subject to an acid rain emission limitation or if the owner or operator of the NO_x emissions unit chooses to meet the annual reporting requirements of this subchapter, the owner or operator shall submit a quarterly report for each calendar quarter beginning with the following quarters:

(a) For units commencing operation prior to December 31, 2002, the calendar quarter from April 1, 2003 to June 30, 2003. Data shall be recorded and reported from the first hour on May 1, 2003.

(b) For a unit that commences operation on or after December 31, 2002, the calendar quarter in which the unit commences operation. Data shall be reported from the date and hour corresponding to when the unit commenced operation.

(2) UNITS NOT SUBJECT TO AN ACID RAIN EMISSION LIMITATION. If an NO_x emissions unit is not subject to an acid rain emission limitation, the owner or operator of the NO_x emissions source shall comply with either of the following requirements:

(a) Meet all of the requirements of 40 CFR part 75 related to monitoring and reporting NO_x emissions during the entire year and meet the reporting deadlines specified in sub. (1).

(b) Submit a quarterly report for each calendar quarter, beginning with the following quarters:

1. For units commencing operation prior to December 31, 2002, the calendar quarter from April 1, 2003 to June 30, 2003. Data shall be reported from the first hour of April 1, 2003.

2. For units that commence operation on or after December 31, 2002, the calendar quarter in which the unit commences operation. Data shall be reported from the date and hour corresponding to when the unit commenced operation.

(3) DEADLINES FOR SUBMITTALS. The owner or operator of an NO_x emissions source shall submit each quarterly report to the department within 30 days following the end of the calendar quarter covered by the report according to the following schedule:

(a) For units subject to an acid rain emissions limitation, quarterly reports shall be submitted within 30 days following the end of the calendar quarter covered by the report and include all of the data and information required in subpart G of 40 CFR part 75.

(b) For units not subject to an acid rain emissions limitation, reports shall be submitted with the compliance reports required under the facility's operation permit.

(4) COMPLIANCE CERTIFICATION. The owner or operator of an NO_x emissions source 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 unit's emissions are correctly and fully monitored. The certification shall state the following:

(a) The monitoring data submitted were recorded in accordance with the applicable requirements of this subchapter, including the quality assurance procedures and specifications.

(b) For a unit with add–on NO_x emission controls and for all hours where data are substituted in accordance with 40 CFR 75.34(a)(1), the add–on emission controls were operating within the range of parameters listed in the monitoring plan and the substitute values do not systematically underestimate NO_x emissions.

(c) For a unit that is reporting on an ozone season basis under this subsection, the NO_x emission rate and NO_x concentration values substituted for missing data under subpart D of 40 CFR part 75 are calculated using only values from an ozone season and do not systematically underestimate NO_x emissions.

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01; CR 08–103: am. (2) (a) Register August 2009 No. 644, eff. 9–1–09.

NR 428.10 Petitions. The owner or operator of an NO_x emissions source may submit a petition to the department requesting approval to apply an alternative to any requirement of this subchapter. Application of an alternative to any requirement of this subchapter is in accordance with this subchapter only to the extent that the petition under this section is approved by the department.

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01.

NR 428.11 Additional requirements to provide heat input data. The owner or operator of a unit that either monitors and reports or elects to monitor and report NO_x mass emissions using an NO_x concentration system and a flow system shall also monitor and report heat input at the unit level.

History: Cr. Register, January, 2001, No. 541, eff. 2–1–01.

NR 428.12 Alternative monitoring, recordkeeping and reporting. (1) RACT EMISSIONS UNITS. The owner or operator of an NO_x emissions unit that is also subject to an emission limitation in s. NR 428.22 may satisfy the NO_x emissions monitoring and reporting requirements of this subchapter by meeting the applicable NO_x emissions monitoring requirements in s. NR 428.23 (1) (b) and (2) and the recordkeeping and reporting requirements in s. NR 428.24 (1).

(2) NON–RACT EMISSIONS UNITS. The owner or operator of an NO_x emissions unit subject to an emission limitation in s. NR 428.04 (2) or 428.05 (3) may satisfy the NO_x emissions monitoring and reporting requirements of this subchapter by meeting, as applicable by source type, the NO_x emissions monitoring requirements in s. NR 428.23 (1) (b) and (2) and the recordkeeping and reporting requirements in s. NR 428.24 (1).

History: CR 08–103: cr. Register August 2009 No. 644, eff. 9–1–09.

Subchapter IV — NO_X Reasonably Available Control Technology Requirements

NR 428.20 Applicability and purpose. (1) APPLICABILITY. (a) The requirements of this subchapter apply to the owner or operator of a NO_X emissions unit that is in a source category identified under s. NR 428.22 and that is located at a facility that meets any of the following conditions:

1. The facility is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha and the maximum theoretical emissions of NOx from all emission units in all source categories identified under s. NR 428.22 combined is equal to or greater than 100 tpy.

2. The facility is located in an area that is classified as a moderate, serious, severe, or extreme ozone nonattainment area and the maximum theoretical emissions of NOx from all emission units in all source categories identified under s. NR 428.22 combined is equal to or greater than the following:

a. 100 tpy for moderate ozone nonattainment area.

b. 50 tpy for serious ozone nonattainment area.

c. 25 tpy for severe ozone nonattainment area.

d. 10 tpy for extreme ozone nonattainment area.

3. The facility is located in an area that, at any time on or after July 20, 2012, had been classified as a moderate, serious, severe, or extreme ozone nonattainment area and the maximum theoretical emissions of NOx from all emission units in all source categories identified under s. NR 428.22 combined is equal to or greater than the following:

a. 100 tpy for former moderate ozone nonattainment area.

b. 50 tpy for former serious ozone nonattainment area.

c. 25 tpy for former severe ozone nonattainment area.

d. 10 tpy for former extreme ozone nonattainment area.

(b) If more than one emission threshold under par. (a) is applicable to the same area due to different ozone standards or a change in nonattainment classification, the lowest applicable emission threshold under par. (a) 2. or 3. applies.

Note: The department maintains materials accessible to the public that show current Wisconsin nonattainment areas and summarizes the applicable permitting requirements for major sources of emissions within these areas.

(c) The requirements of this subchapter remain applicable to each affected unit regardless of any subsequent decrease in maximum theoretical emissions of NOx at the source to a level below the applicable emission thresholds.

(2) PURPOSE. The purpose of this subchapter is to meet the requirements of sections 172 (c) and 182 (f) of the Act (42 USC 7502 (c) and 7511a (f)) by establishing reasonably available control technology standards for NOx emissions units in areas that are or have ever been classified as moderate, serious, severe, or extreme nonattainment for ozone under sub. (1).

History: CR 07–016: cr. Register July 2007 No. 619, eff. 8–1–07; CR 08–103: am. (1) Register August 2009 No. 644, eff. 9–1–09; CR 21–022: renum. (1) to (1) (a) (intro.) and am., cr. (1) (a) 1. to 3., (b), (c), am. (2) Register February 2022 No. 794, eff. 3–1–22; correction in (2) made under s. 35.17, Stats., Register February 2022 No. 794.

NR 428.21 Emissions unit exceptions. The emissions units described in this section are exempt from the emission limitation requirements of s. NR 428.22, but shall comply with applicable record keeping requirements under s. NR 428.24. Once an emissions unit no longer qualifies for an exemption, the owner or operator of the emissions unit shall comply with the requirements of s. NR 428.22 by December 31 of the following calendar year, unless an alternate date is approved in writing by the department and the administrator.

(1) GENERAL EXEMPTIONS. The following emissions units and processes are exempt from the emission limitations in s. NR 428.22:

(a) Any emissions unit operated only to restart electric generation in the event of a complete loss of facility power.

(b) Any emissions unit which is operated no more than 500 hours per year and no more than 200 hours during the ozone season and whose only purpose is to provide electricity to a facility if normal electricity service is interrupted or to replace normal critical operations at a facility.

(c) Any emissions unit whose only function is to pump water in the case of a fire emergency.

(d) Any emissions unit whose utilization is less than 10% of its capacity factor on an annual average basis over a 3–year rolling period and less than 20% of its capacity factor in any year of the 3–year rolling period and which is owned or operated by an electric generation utility or gas transmission utility.

(e) A research or development unit.

(f) An engine testing operation or process line.

(g) Any gaseous fuel fired unit used to control VOC emissions from a commercial or industrial process.

(2) LOW OPERATING UNIT. An emissions unit described in s. NR 428.20 is exempt from the emission limitations of s. NR 428.22 if, during each ozone season, the emissions unit's utilization based on actual measured heat input or output is less than the utilization threshold for the source category according to the following equation:

UU_i < (Category capacity) x (3,672 hours / Ozone Season) x Capacity Factor Equation 1

where:

UU_i is the unit's actual fuel consumption or output in measurement units consistent with the calculated utilization threshold for the source category in s. NR 428.22

Category capacity is the lower value in the range of unit capacity or design output used to describe the unit's source category i in s. NR 428.22

Capacity factor is 0.20 for all source categories in s. NR 428.22

(2m) RECIPROCATING ENGINES. Any reciprocating engine that is certified to meet the applicable federal non–road engine emission standards specified in this subsection is exempt from the emission limitations of s. NR 428.22 (1) (i):

(a) A reciprocating compression ignition engine that is certified as meeting Tier 1 requirements as specified in 40 CFR part 89, if one of the following applies:

1. The engine has a maximum design power output of less than 2,000 horsepower.

2. The engine has a maximum design power output equal to or greater than 2,000 horsepower and has a total utilization during each ozone season of less than 1.5 million horsepower–hours, based on actual measured output.

(b) A reciprocating compression ignition engine that is certified as meeting the Tier 2 standard, as specified in 40 CFR part 89, or a reciprocating compression ignition engine that is certified as meeting the requirements of a more stringent Tier standard, as specified in 40 CFR part 89 or 1039.

(c) A reciprocating spark ignition engine that is certified as meeting the Tier 1 standard or a reciprocating spark ignition engine that is certified as meeting a more stringent Tier standard, as specified in 40 CFR part 1048.

(3) OTHER REGULATED UNIT. An emissions unit is exempt from the emission limitations under s. NR 428.22 if it meets all of the following conditions:

(a) The emissions unit does not emit more than 75 tons of NOx per year due to a physical operating constraint or a federally enforceable condition in an air permit.

(b) The emissions unit is located in a facility subject to the applicability thresholds specified under s. NR 428.20 (1) (a) 1., 2. a., or 3. a.

(c) The emissions unit is subject to and meeting an emission limitation under s. NR 428.04 (2) or 428.05 (3).

(d) The emissions unit was constructed prior to August 1, 2007.

History: CR 07–016: cr. Register July 2007 No. 619, eff. 8–1–07; CR 21–022: am. (3) (intro.), (a), (b), cr. (3) (c) Register February 2022 No. 794, eff. 3–1–22; correction in (3) (intro.) made under s. 35.17, Stats., Register February 2022 No. 794; **CR 23–017: cr. (3) (d) Register March 2024 No. 819, eff. 4–1–24.**

NR 428.22 Emission limitation requirements. **(1)** EMISSION LIMITS. Except as provided under subs. (2) and (3), on or after May 1, 2009, no person may cause, allow, or permit NO_X to be emitted in excess of the following emission limitations on a 30–day rolling average basis:

(a) *Boilers.* 1. For a solid fuel–fired boiler with a maximum heat input capacity equal to or greater than 1,000 mmBtu per hour, one of the following, as applicable:

a. If tangential, wall, cyclone or fluidized bed–fired, 0.10 pound per mmBtu of heat input.

b. If arch–fired, 0.18 pound per mmBtu of heat input.

2. For a solid fuel–fired boiler with a maximum heat input capacity equal to or greater than 500 mmBtu per hour and less than 1,000 mmBtu per hour, one of the following, as applicable:

a. If tangential–fired, 0.15 pound per mmBtu of heat input.

b. If wall–fired with a heat release rate equal to or greater than 17,000 Btu per cubic feet per hour, 0.17 pound per mmBtu of heat input.

c. If wall–fired with a heat release rate less than 17,000 Btu per cubic feet per hour, 0.15 pound per mmBtu of heat input.

d. If cyclone–fired, 0.15 pound per mmBtu of heat input.

e. If arch–fired, 0.18 pound per mmBtu of heat input.

f. If fluidized bed–fired, 0.10 pound per mmBtu of heat input.

3. For a solid fuel–fired boiler with a maximum heat input capacity equal to or greater than 250 mmBtu per hour and less than 500 mmBtu per hour, one of the following, as applicable:

a. If tangential–fired, 0.15 pound per mmBtu of heat input.

b. If wall–fired with a heat release rate equal to or greater than 17,000 Btu per cubic feet per hour, 0.17 pound per mmBtu of heat input.

c. If wall–fired with a heat release rate less than 17,000 Btu per cubic feet per hour, 0.15 pound per mmBtu of heat input.

d. If cyclone–fired, 0.15 pound per mmBtu of heat input.

f. If arch–fired, 0.18 pound per mmBtu of heat input.

g. If fluidized bed–fired, 0.10 pound per mmBtu of heat input.

h. If stoker–fired, 0.20 pound per mmBtu of heat input.

4. For a solid fuel–fired boiler with a maximum heat input capacity equal to or greater than 50 mmBtu per hour and less than 250 mmBtu per hour, one of the following, as applicable:

a. If tangential–fired, 0.15 pound per mmBtu of heat input.

b. If wall–fired with a heat release rate equal to or greater than 17,000 Btu per cubic feet per hour, 0.17 pound per mmBtu of heat input.

c. If wall–fired with a heat release rate less than 17,000 Btu per cubic feet per hour, 0.15 pound per mmBtu of heat input.

d. If cyclone–fired, 0.15 pound per mmBtu of heat input.

e. If fluidized bed–fired, 0.10 pound per mmBtu of heat input.

f. If stoker–fired, 0.25 pound per mmBtu of heat input.

5. For a gaseous fuel–fired boiler with a maximum heat input capacity equal to or greater than 100 mmBtu per hour, 0.08 pound per mmBtu of heat input.

6. For a distillate fuel oil–fired boiler with a maximum heat input capacity equal to or greater than 100 mmBtu per hour, 0.10 pound per mmBtu of heat input.

7. For a residual fuel oil–fired boiler with a maximum heat input capacity equal to or greater than 65 mmBtu per hour, 0.15 pound per mmBtu of heat input.

(b) *Lime kilns.* For a lime kiln with a maximum heat input capacity equal to or greater than 50 mmBtu per hour, one of the following as applicable:

1. For a gaseous fuel–fired unit, 0.10 pound per mmBtu of heat input.

2. For a distillate oil–fired unit, 0.12 pound per mmBtu of heat input.

3. For a residual oil–fired unit, 0.15 pound per mmBtu of heat input.

4. For a coal–fired unit, 0.60 pound per mmBtu of heat input.

5. For a coke–fired unit, 0.70 pound per mmBtu of heat input.

(c) *Reheat, annealing or galvanizing furnaces.* For a reheat, annealing or galvanizing furnace with a maximum heat input capacity equal to or greater than 75 mmBtu per hour, 0.08 pounds per million Btu of heat input.

(d) *Glass furnaces.* 1. For a glass manufacturing furnace with a maximum heat input capacity equal to or greater than 50 mmBtu per hour, 2.0 pounds per ton of produced glass, except as provided in subd. 2.

2. When, on a daily basis, a glass furnace is operated at less than 25% of glass production capacity, the owner or operator shall operate the furnace according to the combustion optimization requirements of s. NR 439.096 and shall meet the monitoring requirements of s. NR 428.05 (2) (e).

(e) *Asphalt plants.* For an asphalt plant with a maximum heat input capacity equal to or greater than 65 mmBtu per hour, one of the following as applicable:

1. For a gaseous fuel–fired unit, 0.15 pound per million Btu of heat input.

2. For a distillate fuel oil–fired unit, 0.20 pound per million Btu of heat input.

3. For a residual fuel oil–fired or waste oil–fired unit, 0.27 pound per million Btu of heat input.

(f) *Process heating.* For a process heater, dryer, oven or other process heating device, one of the following as applicable:

1. For a gaseous fuel–fired unit with a maximum heat input capacity equal to or greater than 100 mmBtu per hour, 0.10 pound per mmBtu of heat input.

2. For a distillate oil–fired unit with a maximum heat input capacity equal to or greater than 100 mmBtu per hour, 0.12 pound per mmBtu of heat input.

3. For a residual oil–fired unit with a maximum heat input capacity equal to or greater than 65 mmBtu per hour, 0.18 pound per mmBtu of heat input.

(g) *Simple cycle combustion turbines.* For a simple cycle combustion turbine, one of the following exhaust outlet concentrations, corrected to 15% O_2 and at ambient temperatures greater than 0°F, as applicable:

1. For a unit with a maximum design power output equal to or greater than 50 megawatts, one of the following, as applicable:

a. If natural gas–fired, 25 parts per million dry volume.

b. If distillate oil fuel–fired, 65 parts per million dry volume.

c. If biologically derived gaseous fuel–fired, 35 parts per million dry volume.

2. For a unit with a maximum design power output equal to or greater than 25 megawatts and less than 50 megawatts, one of the following as applicable:

a. If natural gas–fired, 42 parts per million dry volume.

b. If distillate oil fuel–fired, 96 parts per million dry volume.

c. If biologically derived gaseous fuel–fired, 35 parts per million dry volume.

(h) *Combined cycle combustion turbines.* For a combined cycle combustion turbine, one of the following exhaust outlet concentrations, corrected to 15% O_2 and at ambient temperatures greater than 0°F, as applicable:

1. For a natural gas–fired unit with a maximum design power output equal to or greater than 25 megawatts, 9 parts per million dry volume.

2. For a natural gas–fired unit with a maximum design power output equal to or greater than 10 megawatts and less than 25 megawatts, 42 parts per million dry volume.

3. For a distillate oil fuel–fired unit with a maximum design power output equal to or greater than 10 megawatts, 42 parts per million dry volume.

4. For a biologically derived gaseous fuel–fired unit with a maximum design power output equal to or greater than 10 megawatts, 35 parts per million dry volume.

(i) *Reciprocating engines.* For a reciprocating engine with a maximum design power output equal to or greater than 500 horsepower, one of the following as applicable:

1. For a rich–burn spark ignition unit, 3.0 grams per brake horsepower–hour.

2. For a lean–burn spark ignition unit, 3.0 grams per brake horsepower–hour.

3. For a diesel fuel–fired compression unit, 3.0 grams per brake horsepower–hour.

4. For a dual fuel–fired compression unit, 3.0 grams per brake horsepower–hour.

(2) ELECTRIC UTILITY BOILER COMPLIANCE SCHEDULE. The owner or operator of an electric utility boiler shall demonstrate compliance with the following interim NO_x emission limitations, as applicable, on a 30–day rolling average by May 1, 2009 and with the emission limitations in sub. (1) (a) on and after May 1, 2013:

(a) For a solid fuel–fired boiler with a maximum heat input capacity equal to or greater than 1,000 mmBtu per hour, one of the following, as applicable:

1. If tangential, wall, cyclone or fluidized bed–fired, 0.15 pound per mmBtu of heat input.

2. If arch–fired, 0.18 pound per mmBtu of heat input.

(b) For a solid fuel–fired boiler with a maximum heat input capacity equal to or greater than 500 mmBtu per hour and less than 1,000 mmBtu per hour, one of the following, as applicable:

1. If tangential–fired, 0.15 pound per mmBtu of heat input.

2. If wall–fired, 0.20 pound per mmBtu of heat input.

3. If cyclone–fired, 0.20 pound per mmBtu of heat input.

4. If arch–fired, 0.18 pound per mmBtu of heat input.

5. If fluidized bed–fired, 0.15 pound per mmBtu of heat input.

(3) EMISSIONS UNITS USING SECONDARY FUEL. An emissions unit that is capable of firing secondary fuel is not subject to the requirements under sub. (1) or (2) when utilizing only a secondary fuel if any of the following apply:

(a) The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under sub. (1) or (2).

(b) The emissions unit burns the secondary fuel only during any of the following periods:

1. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this subsection may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

2. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

(c) The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

History: CR 07–016: cr. Register July 2007 No. 619, eff. 8–1–07; CR 08–103: renum. (1) (d) to be (1) (d) 1. and am., cr. (1) (d) 2., am. (2) (intro.) Register August 2009 No. 644, eff. 9–1–09; **CR 23–017: am. (1) (intro.), cr. (3) Register March 2024 No. 819, eff. 4–1–24.**

NR 428.23 Demonstrating compliance with emission limitations. The owner or operator of an emissions unit shall determine the emissions unit's NO_x emissions and shall determine compliance with the emission limitations in s. NR 428.22 according to the applicable methods in this section.

(1) EMISSIONS MONITORING REQUIREMENTS. (a) *Installation and operation.* No later than April 1, 2009 or April 1 of the year an emissions unit first becomes subject to an emission limitation in s. NR 428.22, the owner or operator of the emissions unit shall do the following:

1. Submit to the department in writing, a certification of the installation and operation of all monitoring systems or a certification of the completion of initial emission performance tests required under par. (b).

2. Begin and continue to monitor, measure and record all data necessary to determine emissions in the measurement units of the applicable emission limitation according to the methods of this section.

(b) *Monitoring systems and procedures.* 1. 'Part 75 continuous emissions monitoring.' The owner or operator of an electric utility boiler or combustion turbine that is subject to or becomes subject to the requirements of 40 CFR part 75 and 40 CFR part 75, Appendices A to I, incorporated by reference in s. NR 484.04 (27), shall use those monitoring methods and specifications for monitoring NO_x emissions for purposes of this subsection.

2. 'Continuous emissions monitoring.' Except as provided in subd. 1., the owner or operator of an emissions unit subject to an emissions limitation in s. NR 428.22 (1) (a) to (d) shall monitor NO_x emissions for requirements of this subsection according to the following specifications, as applicable:

a. The owner or operator shall install and operate a continuous emissions monitoring system that measures the hourly average NO_x emission rate.

b. The emissions monitoring system shall consist of an NO_x diluent continuous emissions analyzer and, as applicable, an O_2 or CO_2 diluent continuous emissions analyzer to correct all emissions data and heat rate values for the emissions unit to the same moisture and diluent gas basis, as required in subd. 6. b.

c. The owner or operator shall calibrate, maintain and operate the emissions monitoring system according to the requirements of s. NR 439.09 (9), the applicable operating requirements of 40 CFR 60.13, the performance specifications in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 484.04 (21) and the quality assurance procedures of 40 CFR part 60, Appendix F, incorporated by reference in s. NR 484.04 (21m).

d. For an emissions unit subject to an NO_x emission limit on a pound per million Btu basis, the emissions shall be determined using the F–factor method according to methods in Method 19 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (16m).

e. Except for an emissions unit subject to subd. 1. or an emissions unit subject to an emission limitation in s. NR 428.22 (1) (a) 1. to 4., an owner or operator of an emissions unit may measure NO_x emissions for compliance determination purposes using continuous parametric monitoring methods meeting emissions monitoring specifications in 40 CFR part 75, Appendix E, incorporated by reference in s. NR 484.04 (26m) (cm).

3. 'Periodic emissions performance test.' Except as provided in subd. 1., the owner or operator of an emissions unit subject to s. NR 428.22 (1) (e) to (i) shall conduct an initial performance test and a subsequent performance test every 2 years thereafter, according to the following requirements, as applicable, to determine the emissions unit's NO_x emission rate for each fuel fired in the emissions unit. A performance test is not required for a fuel used only for startup or for a fuel constituting less than 1% of the unit's annual fuel consumption.

a. The emissions performance test shall be conducted according to one of the following methods as applicable: Method 7, 7A, 7B, 7C, 7D or 7E in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (15m).

b. Except for units specified in subd. 3. c., the initial emissions performance test shall include a determination of the capacity load point of the unit's maximum NO_x emissions rate based on one 30 minute test run at each capacity load point for which the unit is operated, other than for startup and shutdown, in the load ranges of 20 to 30%, 45 to 55%, 70 to 80% and 90 to 100%.

c. The emissions performance tests for emissions units subject to s. NR 428.22 (1) (g) or (h) shall be conducted within 10% of full load operation.

d. The emissions performance test shall determine compliance based on the average of 3 60–minute test runs performed at the capacity load specified in subd. 3. b. or c.

e. An additional performance test shall be conducted according to subd. 3. b. or c. within 90 days of completing an equipment modification or change in fuel which has the potential to increase the NO_x emissions concentration or rate.

4. 'Continuous monitoring for an output based standard.' In addition to applicable monitoring and measuring requirements under subd. 2., the owner or operator of an emissions unit subject to an output emission limitation in s. NR 428.22 (1) (d) shall do the following:

a. Install, maintain and operate monitoring equipment for measuring and recording the output on an hourly basis with plus or minus 5% accuracy, in units consistent with the applicable emission limitation.

b. Calculate on an hourly basis, the output based emission rate as the hourly mass of NO_x emissions determined according to subd. 5. divided by the emissions unit's total output for that hour.

5. 'Continuous monitoring of total heat input and mass emissions.' The owner or operator of an emissions unit required to measure total heat input or mass NO_x emissions for requirements of subd. 4., sub. (2) (c) and s. NR 428.25 (1) (b) or (c) shall perform the applicable measurements according to following:

a. Except as allowed in subd. 5. d., install, calibrate, maintain and operate a volumetric flue gas flow monitoring system meeting specifications in subd. 2. c. The hourly heat input shall be determined using the F–factor and the as fired fuel heat content according to Method 19 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (16m).

b. Unless specified in Method 19 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (16m), the heat content value for each fuel shall be based on a heat content analysis.

c. The mass of NO_x emissions shall be determined on an hourly basis by either multiplying the NO_x concentration by the flue gas flow rate corrected for diluent gas and moisture or, by multiplying the monitored hourly average emission rate in mass per mmBtu by the total heat input as determined under subd. 5. a. or b. The calculations of mass emissions are to be performed according to conversion procedures in 40 CFR part 75, Appendix F, incorporated by reference in s. NR 484.04 (26m) (d).

d. For a liquid or gaseous fuel fired system, the total heat input and mass of NO_x emissions may be determined using a fuel flow monitoring system capable of determining the hourly flow with plus or minus 5% accuracy and using continuous parametric monitoring as specified under subd. 2. e. The total heat input shall be calculated as the total fuel flow multiplied by the fuel heat content.

6. 'General monitoring requirements.' Unless otherwise specified in this subsection, an owner or operator shall meet the following requirements:

a. All certification tests or emissions performance tests shall be performed according to procedures of s. NR 439.07.

b. The determination of emission rates, mass emissions and total heat input shall be calculated and corrected to the same basis for flue gas moisture and diluent gases according to Method 19 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (16m), or 40 CFR part 75, Appendix F, incorporated by reference in s. NR 484.04 (26m) (d).

c. For emissions units with a common flue gas stack system, all sampling locations and apportionment of emissions to an individual emissions unit shall conform to applicable procedures and methods in 40 CFR part 75, Appendix F, incorporated by reference in s. NR 484.04 (26m) (d).

7. 'Malfunction and abatement.' An owner or operator of an emissions unit subject to the malfunction and abatement plan requirement of s. NR 439.11 shall include a malfunction plan for the emissions monitoring system and a monitoring and operating plan for continuing operation of the emissions unit in a manner consistent with meeting all applicable emission limitations during any period when the monitoring system malfunctions or is inoperable other than for scheduled maintenance.

8. 'Alternate emissions monitoring.' An owner or operator of an emissions unit may request and monitor NO_x emissions for compliance determination purposes using an equivalent alternative method to any requirement of this subsection with written approval of the department and the administrator.

9. 'Emissions monitoring preference.' a. The owner or operator of an emissions unit that installs and operates a continuous NO_x emissions monitoring system according to the requirements of 40 CFR part 75 shall satisfy the applicable monitoring requirements of this section.

b. The owner or operator of an emissions unit that installs and operates a continuous NO_x emissions monitoring system according to the requirements of 40 CFR part 60 shall satisfy the applicable monitoring requirements of subd. 3.

(2) COMPILATION OF EMISSIONS. An owner or operator shall compile the measured emissions data in measurement units consistent with the units of the applicable emission limitation according to the following applicable calculation and tabulation methods for purposes of demonstrating compliance:

(a) *Continuous emissions monitoring*. When measuring emissions according to requirements in sub. (1) (b) 1. or 2.:

1. The average emission rate shall be the average of the hourly average emissions obtained from the continuous emissions monitoring system for the hours the emissions unit operated during the averaging period. The calculation is as follows:

$$E_A = \left(\frac{1}{n}\right)\sum_{j=1}^{n} E_{H,j} \qquad \text{Equation 2}$$

where:

E_A is the average emission rate for the compliance period in units consistent with units of the applicable emission limit

$E_{H,j}$ is the hourly average emission rate for each hour, j, for which the emissions unit is operating during the compliance period in units consistent with units of the applicable emission limit

n is the total number of hours the emissions unit operated during the compliance period

2. The 30–day rolling period shall consist of the day of monitoring and the previous 29 consecutive calendar days. A new 30–day rolling average emission rate (E_A) shall be calculated and recorded at the end of each day.

(b) *Emissions performance testing*. When measuring emissions according to performance testing requirements of sub. (1) (b) 3., the 30–day rolling average emission rate or concentration shall be the emissions determined in sub. (1) (b) 3. d. for the most recent performance test.

(c) *Multiple fuel–fired emissions units*. When measuring emissions for an emissions unit firing multiple fuels, compliance shall be determined according to one of the following methods:

1. The unit's emissions shall be monitored and compiled according to applicable methods in par. (a) or (b) for each individual fuel and compliance demonstrated with the emission limitation for each fuel.

2. The unit's emissions and a multiple fuel emission limit shall be determined on a total heat input fuel weighted basis according to equation 3. A fuel representing less than 1% of the unit's annual fuel consumption on a heat input basis may be excluded in determining the multiple fuel emission limit.

$$E_{HIWeighted} = \frac{\sum_{f=1}^{n} E_f HI_f}{\sum_{f=1}^{n} HI_f} \qquad \text{Equation 3}$$

where:

$E_{HIWeighted}$ is the heat input weighted multiple fuel emission rate or emission limitation for the compliance period in units consistent with the units of the emission limitation

E_f is the emission rate or emission limit for fuel f during the compliance period in units consistent with the units of the emission limitation

HI_f is the total heat input for fuel f during the compliance period

n is the number of different fuels used during the compliance period

(d) *Total heat input and mass emissions.* When measuring hourly heat input or mass of NO_x emissions according to sub. (1) (b) 5., the totals over a period of time shall be compiled according to the following procedures:

1. The total hourly heat input shall be summed for the hours the emissions unit operated during the applicable period of time according to equation 4.

$$HI_{total} = \sum_{h=1}^{n} HI_h \qquad \text{Equation 4}$$

where:

HI_{total} is the total heat input by fuel over the period of time

HI_h is the heat input by fuel for hour h

n is the number of hours over which the specific fuel was burned

2. The total hourly mass of NO_x emissions shall be summed for the hours the emissions unit operated during the applicable period of time according to equation 5.

$$NO_x\ Mass_{total} = \sum_{h=1}^{n} Mass_h \qquad \text{Equation 5}$$

where:

$NO_x\ Mass_{total}$ is the total mass of NO_x emissions over the period of time

$Mass_h$ is the mass of NO_x emissions for hour h

n is the number of hours the emissions unit is operating during the specified period of time

History: CR 07–016: cr. Register July 2007 No. 619, eff. 8–1–07; CR 08–103: am. (1) (b) 1., cr. (1) (b) 9. Register August 2009 No. 644, eff. 9–1–09.

NR 428.24 Recordkeeping and reporting. (1) EMISSION LIMITATIONS. The owner or operator of an emissions unit subject to an emission limitation in s. NR 428.22 shall meet the recordkeeping and reporting requirements of this subsection.

(a) *Recordkeeping.* In addition to the recordkeeping requirements of ss. NR 439.04 (1) and (2) and 439.05, the owner or operator shall maintain records of all of the following:

1. The applicable emission limit and calculated heat input weighted emission limit for an emissions unit demonstrating compliance for multiple fuels.

2. The 30–day rolling average emission rate on a daily basis determined according to s. NR 428.23.

3. The total monthly heat input for each fuel or the emissions unit output, as applicable, in measurement units consistent with the units of the applicable emission limitation.

4. The emissions unit's annual and ozone season capacity utilization in measurement units consistent with the units of the applicable emission limitation.

5. For the emissions monitoring system required in s. NR 428.23 (1) (b) on an annual and on an ozone season basis, records of performed maintenance, hours of malfunction and necessary repairs, and the percent of hours the monitoring system operated during the emissions unit's operating hours.

(b) *Reporting.* In the reports to the department required under s. NR 428.25 (1), if applicable, or s. NR 439.03 (1) (b), the owner or operator shall submit the following information:

1. A certification of compliance with the applicable emission limitation in s. NR 428.22 or identification of the periods of non–compliance, with a quantification of the excess emission rate and the excess mass emissions.

2. For each calendar month, the highest 30–day rolling average emission rate. The emissions data shall be reported in the measurement units of the applicable emission limitation.

3. The emissions unit's annual and ozone season total operating hours, capacity utilization, and the percent operation of any required continuous emissions or combustion monitoring systems during the hours the emissions unit was operating.

(c) *Secondary fuel usage recordkeeping.* The owner or operator claiming exemption from the requirements under s. NR 428.22 pursuant to s. NR 428.22 (3) shall keep a record of all of the following:

1. Each occurrence when the fuel denoted under s. NR 428.22 (3) was burned.

2. The reason for each occurrence when the fuel denoted under s. NR 428.22 (3) was burned.

3. The monthly and yearly total hours of operation for each fuel used as specified under s. NR 428.22 (3).

4. Other relevant information as required by the department.

(2) GENERAL EXEMPTION UNIT. The owner or operator of an emissions unit claiming exemption under s. NR 428.21 (1), shall record operational parameters necessary to demonstrate the unit's qualification for the exemption status.

(2m) RECIPROCATING ENGINES. The owner or operator of an emissions unit claiming exemption under s. NR 428.21 (2m) (a) 2., shall maintain a record of horsepower–hours of operation for each ozone season. Measurement of horsepower–hours may be determined using recorded data which can be directly related to actual horsepower–hours of operation of the engine including actual total operating hours, fuel consumption, or load and duration measurements.

(3) LOW OPERATING UNIT. The owner or operator claiming a low operating unit exemption for an emissions unit under s. NR 428.21 (2), shall maintain a record of the unit's applicable fuel heat input or production output, as applicable, the unit's total capacity utilization on an ozone season and on an annual basis for each calendar year and calculations demonstrating the unit's qualification for the exemption.

(4) OTHER REGULATED UNIT. The owner or operator claiming a regulated emissions unit exemption for an emissions unit under s. NR 428.21 (3), shall maintain a record of all performance tests, calculations, assumptions and methods used to determine the emissions unit's potential emissions.

History: CR 07–016: cr. Register July 2007 No. 619, eff. 8–1–07; CR 08–103: am. (1) (b) (intro.) Register August 2009 No. 644, eff. 9–1–09; **CR 23–017: cr. (1) (c) Register March 2024 No. 819, eff. 4–1–24.**

NR 428.25 Alternative compliance methods and approaches. (1) EMISSIONS AVERAGING. The owner or operator of an emissions unit may demonstrate compliance with an NO_x emission limitation in s. NR 428.22 by participating in an emissions rate averaging program according to the general provisions of par. (a) and either the specifications for facility wide averaging in par. (b) or for multi–facility averaging in par. (c).

(a) *General provisions.* 1. 'Participating units.' a. The participation of an emissions unit in an emissions averaging program shall be designated for each calendar year. Individual emissions units may not be withdrawn from an averaging program during a calendar year, unless each emissions unit in the averaging program meets its applicable emission limit in s. NR 428.22.

b. If an emissions unit at a facility participates in an averaging program, all similar units at the facility shall be included in the averaging program unless the unit is complying with an emission limit in s. NR 428.22 or is participating in another emissions averaging program under this subsection. Similar units at a facility are those which serve a similar process or purpose and which are described by the same general source category under s. NR 428.22 without regard to fuel type or unit size threshold.

c. An emissions unit for which the department has approved an alternative emission limit or compliance schedule under sub. (3) may not participate in an emissions averaging program under this subsection for the purpose of demonstrating compliance with the approved alternative emission limitation or compliance schedule.

2. 'Monitoring requirement.' The owner or operator of an emissions unit participating in an emissions averaging program shall monitor all necessary NO_x emissions, as applicable, according to requirements of s. NR 428.23 (1) (b) 1. or 2. The total heat input and NO_x mass emissions shall be monitored and measured according to s. NR 428.23 (1) (b) 5. and compiled according to s. NR 428.23 (2) (d).

3. 'New units'. An emissions unit which begins operation on or after August 1, 2007 may not participate in an emissions averaging program under this subsection.

4. 'Emission reductions.' For purposes of this subsection, only emission reductions which go beyond all state and federal requirements are considered excess emission reductions.

(b) *Facility averaging*. An owner or operator may average emissions from emissions units at one facility by complying with the following procedures for demonstrating compliance on an annual and on an ozone season basis with an aggregate NO_x emission limit and mass emissions cap:

1. 'Notification.' The owner or operator shall submit to the department a notification of an NO_x emissions averaging program by October 1 of the year prior to the emissions averaging year. The notification shall include the following information:

a. The participating emissions units.

b. The owner or operator of each emissions unit.

c. For a unit subject to s. NR 428.22, the applicable emission limitation.

d. For a participating emissions unit not subject to s. NR 428.22, the average emission rate by fuel type over the unit's normal operating range determined according to methods of s. NR 428.23 (1) (b) 3. The tested average emission rate may be adjusted based on a heat input weighted average of the emissions unit's annual percent operation at different load points in the previous calendar year.

e. For averaging programs effective on or after January 1, 2013, for each emissions unit, the annual and ozone season heat input for 2000 to 2005, and the annual and ozone season average of the 3 years of highest annual heat input for 2000 to 2005.

f. For averaging programs effective on or after January 1, 2013, an annual and ozone season NO_x mass emissions cap in aggregate for the emissions units in the averaging program. The mass emissions caps shall be the summation of the products for each emissions unit of the emission limitation in subd. 1. c. or the average emission rate in subd. 1. d. and the 3–year average annual or ozone season heat input. The mass emission cap shall be calculated as follows:

$$MC = \sum_{i=1}^{n} \left[\sum_{j=1}^{k} E_j HI_j \right]_i \qquad \text{Equation 6}$$

where:

MC is either the annual mass emissions cap or the ozone season mass emissions cap in tons of NO_x for all units participating in the averaging program

E_j is the applicable emission limitation for fuel j submitted in subd. 1. c. or the average emission rate in subd. 1. d.

HI_j is either the average annual or ozone season heat input for fuel j, submitted in subd. 1. e., for the 3 years of highest heat input from 2000 to 2005

k is the number of fuels fired by a unit either during the year or during the ozone season

n is the number of units participating in the averaging program

2. 'Implementation.' The department shall review the proposed averaging program provided in the notification and unless the department, within 30 days of receiving the proposed averaging program, requests additional information or revisions to the program, the owner or operator shall comply with the submitted emissions averaging program.

3. 'Compliance demonstration.' The owner or operator of emissions units participating in the averaging program shall submit a compliance report containing the following information by March 1 of the calendar year following the averaging program year:

a. The annual and ozone season actual heat input by fuel type for each emissions unit in the averaging program.

b. The annual and ozone season actual NO_x mass emissions for each emissions unit.

c. The annual and ozone season actual average NO_x emission rate for each emissions unit calculated as follows:

$$ER_{avg} = \frac{NO_x \text{ Mass}}{\sum_{j=1}^{n} HI_j} \qquad \text{Equation 7}$$

where:

ER_{avg} is the annual or ozone season average emission rate for each emissions unit

NO_x Mass is the total NO_x mass emissions for the averaging period

HI_j is the heat input for fuel type j for the averaging period

n is the number of fuels fired during the averaging period

d. The annual and ozone season actual NO_x mass emissions and heat input in aggregate for all emissions units.

e. The annual and ozone season actual aggregate NO_x emission rate for all emissions units. This emission rate is the summation of the total mass of NO_x emissions for all emissions units divided by the total heat input for all emissions units and is calculated as follows:

$$ER_{aggr} = \frac{\sum_{u=1}^{n} NO_x \text{ Mass}_u}{\sum_{u=1}^{n} HI_u} \qquad \text{Equation 8}$$

where:

ER_{aggr} is the emission rate in aggregate for all emissions units on an annual or ozone season basis

NO_x $Mass_u$ is the total NO_x mass emissions for emissions unit u, for the averaging period

HI_u is the total heat input for each emissions unit u, for the averaging period

n is the number of emissions units participating in averaging

f. The annual and ozone season aggregate emission limitation for all emissions units. These emission limitations are the summation of the product of each unit's actual heat input and emission

limitation by fuel type divided by the summation of the actual heat input for all emissions units. The aggregate emission limitations shall be calculated as follows:

$$EL_{aggr} = \frac{\sum_{u=1}^{n}\left(\sum_{f=1}^{j} HI_f EL_f\right)}{\sum_{u=1}^{n} HI_u}$$

Equation 9

where:

EL_{aggr} is the aggregate emission limit for all emissions units on an annual or ozone season basis

HI_f is the heat input for fuel f, for unit u

EL_f is the emission limit for fuel f, for unit u

HI_u is the total heat input for emissions unit u, for the averaging period

n is the number of emissions units participating in averaging

j is the number of fuels for unit u

g. Compliance on an annual and ozone season basis is demonstrated if the aggregate emission rate required in subd. 3. e. is less than the aggregate emission limit required in subd. 3. f., and the NO_x mass emissions required in subd. 3. b. is less than the mass emissions cap required in subd. 1. f.

4. 'Heat input conversion.' For an emissions unit subject to emission limitations expressed in units other than heat input, the emission limitation shall be converted to a heat input basis. All required calculations shall be on a common basis with necessary conversions performed according to the methods in 40 CFR part 60, Appendices A and B, incorporated by reference in s. NR 484.04 (13) and (21).

5. 'Mass emissions cap exceedance.' If the total NO_x emissions from the emissions units in the averaging program exceed either the annual or ozone season emissions caps determined in subd. 1. f., the owner or operator shall achieve additional NO_x reductions to compensate for the excess emissions within 3 calendar years after the averaging year with the exceedance.

(c) *Multi–facility average.* An owner or operator may average emissions from emissions units at multiple facilities by complying with the following procedures for demonstrating compliance on an annual and ozone season basis with an aggregate NO_x emission limitation:

1. 'Notification.' The owner or operator shall submit to the department a notification of an NO_x emissions averaging program by October 1 of the year prior to the emissions averaging year. The notification shall include the following information:

a. The participating emissions units.

b. The owner or operator of each emissions unit.

c. The applicable emission limitation in s. NR 428.22 for each emissions unit.

d. The projected heat input, capacity utilization, NO_x emission rate and total NO_x mass emissions for each emissions unit on an annual and ozone season basis.

e. The projected heat input, capacity utilization, NO_x emission rate and total NO_x mass emissions in aggregate for all emissions units participating in the averaging program.

2. 'Implementation.' The department shall review the proposed averaging program provided in the notification and unless the department, within 30 days of receiving the proposed averaging program, requests additional information or revisions to the program, the owner or operator shall comply with the submitted emissions averaging program.

3. 'Public notice.' a. The owner or operator proposing to average emissions units at multiple facilities shall provide public notice 60 days prior to the calendar year of the averaging program in newspapers of general circulation for the areas of the emissions units.

b. The public notice shall describe the proposed averaging program, the participating emissions units and how to obtain a copy of the averaging program information required in subd. 1.

c. In addition to the information required in subd. 1., the averaging program information provided to the public upon request shall indicate whether any of the emissions units identified in the proposed averaging program participated in prior averaging programs under this subsection and whether that participation resulted in a violation of the emission limits.

4. 'Compliance demonstration.' The owner or operator participating in an averaging program shall submit a compliance report containing the following information by March 1 of the calendar year following the averaging program year:

a. The annual and ozone season actual heat input for each emissions unit.

b. The annual and ozone season actual NO_x mass emissions for each emissions unit.

c. The annual and ozone season actual average NO_x emission rate for each emissions unit calculated using equation 7 in par. (b) 3. c.

d. The annual and ozone season actual NO_x mass emissions and heat input in aggregate for all emissions units.

e. The annual and ozone season aggregate NO_x emission rate for all emissions units calculated using equation 8 in par. (b) 3. e.

f. The annual and ozone season aggregate emission limitation for all emissions units. These emission limitations are the summation of the product of the each unit's actual heat input and emission limitation divided by the summed actual heat input for all emissions units less an averaging program environmental benefit factor. The aggregate emission limitations are calculated as follows:

$$EL_{aggr} = \frac{\sum_{u=1}^{n} HI_u EL_u}{\sum_{u=1}^{n} HI_u} x\,(1–EBF)$$

Equation 10

where:

EL_{aggr} is the aggregate emission limit in aggregate for all emissions units on an annual or ozone season basis

HI_u is the heat input for each emissions unit, u, for the specified period of time

EL_u is the emission limit for each emissions unit, u. For emission limitations in units other than heat input, the emission limitations shall be converted to a heat input basis according to par. (b) 4.

EBF is the environmental benefit factor. For averaging programs effective on or after January 1, 2013, the EBF is 10% for the annual emission limit and 10% for the ozone season emission limit. Prior to this date the EBF is 0%.

g. A demonstration of compliance on an annual and ozone season basis consisting of the aggregate emission rates under subd. 4. e. compared to the aggregate emission limitations calculated in subd. 4. f.

(d) *Violations and penalties.* 1. All emissions units participating in an emissions averaging program are considered out of compliance if emissions exceed any of the averaging program emission limitations on either an annual or ozone season basis.

2. Each emissions unit participating in the averaging program shall be considered in violation for each day of non–compliance until corrective action is taken to achieve compliance.

3. Except for those periods of time for which the department grants an electric or steam utility reliability waiver under s. NR

428.26 to the emissions units exceeding the applicable aggregate average emission limitation, the department shall require the owners or operators of the emissions units in the program to achieve reductions equivalent to the amount of the exceedance. The additional emission reductions shall be achieved within the subsequent 3 years on an annual or ozone season basis, consistent with the period of the exceedance.

4. All owners or operators of emissions units considered out of compliance with an averaging program emission limitation are liable for each violation and subject to enforcement and penalty provisions under ss. 285.83 and 285.87, Stats. The owners or operators of the emissions units in the averaging plan shall evaluate the emissions and operating data for any period of non–compliance to determine which units are responsible for the non–compliance event. The information used in this evaluation shall be made available to the department within 30 days of the discovery of a non–compliance event.

5. The parameters required in the notice under par. (c) 1. d. shall constitute annual and ozone season alternative compliance limits for each unit participating in a multi–facility averaging program under par. (c). If compliance is demonstrated under par. (c) 4. g., all emissions units in the averaging program shall be deemed to be in compliance with the alternative compliance limits.

(2) CAIR EMISSIONS UNITS. The owner or operator of an emissions unit which is subject to the emission reduction requirements of the clean air interstate rule (CAIR) under 40 CFR part 97 may demonstrate that the NO_x emission reductions achieved by the emissions unit in complying with the CAIR requirements constitute compliance with the NO_x RACT emission limitation requirements of this subchapter.

(3) ALTERNATIVE RACT REQUIREMENT. (a) The owner or operator of an emissions unit may request that the department establish an alternative emission limitation or alternative compliance deadline to the requirements in s. NR 428.22 if the owner or operator demonstrates that it is economically or technically infeasible to meet the requirement.

(b) The owner or operator of the emissions unit shall submit the request with the demonstration for an alternative RACT requirement by the following deadlines:

1. By May 1, 2008 for an emissions unit subject to a compliance date of May 1, 2009.

2. By May 1, 2011 for an emissions unit subject to a compliance date of May 1, 2013.

3. By May 1 of the year following the calendar year in which an emissions unit first becomes subject to an emission limitation in s. NR 428.22, if the emissions unit first becomes subject to an emission limitation in s. NR 428.22 after December 31, 2007.

(c) Any request for an alternative RACT requirement made under this subsection shall be subject to the requirements and procedures of s. NR 436.05 and written approval of the administrator.

History: CR 07–016: cr. Register July 2007 No. 619, eff. 8–1–07; CR 08–103: am. (1) (a) 1. a., c., and (3) (b) Register August 2009 No. 644, eff. 9–1–09.

NR 428.255 Compliance schedule. The owner or operator of a facility that has a NOx emission unit that is subject to this subchapter and that is located in any area described under s. NR 428.20 (1) (a) 2. or 3. shall comply with the applicable requirements of this subchapter upon the facility becoming subject to this subchapter, except for any of the following:

(1) The owner or operator of a NOx emission unit that commenced construction before March 1, 2022, and became subject to this subchapter on March 1, 2022, shall comply with the applicable requirements of this subchapter for that unit as expeditiously as practicable, but no later than December 1, 2023.

(2) The owner or operator of a NOx emission unit that becomes subject to this subchapter due to the reclassification of a nonattainment area that occurs after March 1, 2022, shall comply with applicable requirements of this subchapter as expeditiously as practicable, but no later than the start of the attainment year ozone season associated with the area's new attainment deadline, as indicated by the relevant Federal Register publication, or January 1 of the 3rd year after the associated SIP revision submittal deadline, whichever is earlier.

Note: RACT SIP revisions must be submitted by the department no later than 24 months after the effective date of the reclassification, as indicated by the relevant Federal Register publication.

(3) The owner or operator of a NOx emission unit that becomes subject to this subchapter due to the initial designation of a nonattainment area that occurs after March 1, 2022, shall comply with applicable requirements of this subchapter as expeditiously as practicable, but no later than January 1 of the 5th year after the effective date of the initial designation, as indicated by the relevant Federal Register publication.

History: CR 21–022: cr. Register February 2022 No. 794, eff. 3–1–22; correction in (1) made under s. 13.92 (4) (b) 14., Stats., Register February 2022 No. 794.

NR 428.26 Utility reliability waiver. The owner or operator of an emissions unit used for purposes of electric or steam utility generation or natural gas utility transmission and subject to an emission limitation in s. NR 428.22 may request that the department grant a waiver from meeting the emission limitation for a specific period of time based on the following criteria and procedures:

(1) The waiver request is due to the utility's need to maintain a supply of electricity, steam, or natural gas to non–interruptible customers.

(2) A waiver request may only be based on an unavoidable or unforeseeable event including:

(a) A major electric supply event affecting the utility.

(b) A major fuel supply disruption affecting the utility.

(c) A disruption in the operation of a generating unit or pollution control equipment.

(3) The owner or operator of a utility shall submit a written request for a waiver that provides information sufficient to demonstrate to the department's satisfaction that granting the waiver is warranted. The request shall include the following:

(a) The duration of the conditions warranting the waiver.

(b) The specific measures taken to mitigate emissions during the duration for which the waiver is requested.

(c) The reasons why the utility was unable to achieve compliance with the emission requirement.

(4) The department may grant a waiver under this section if, in consultation with the public service commission and written approval by the administrator, the department determines that the owner or operator's failure to meet a requirement under s. NR 428.22 is consistent with criteria of sub. (2).

(5) Within 60 days after the receipt of a complete request, the department shall publish a public notice of the receipt of the waiver request and the department's preliminary determination to approve, partially approve, or deny the request. The department shall provide an opportunity for public comments on the request and the department's preliminary determination. The department shall hold a public hearing on the request if a hearing is requested by a person affected by the waiver request.

(6) Following the public comment period, the department shall notify the applicant in writing of the final determination to approve, conditionally approve or deny the waiver request.

History: CR 07–016: cr. Register July 2007 No. 619, eff. 8–1–07.

Chapter NR 484

INCORPORATION BY REFERENCE

NR 484.01 Applicability; purpose. (1) APPLICABILITY. This chapter applies to all air contaminant sources governed by chs. NR 400 to 499 and to their owners and operators.

(2) PURPOSE. This chapter is adopted under ss. 227.21 (2) and 285.11, Stats., to incorporate by reference testing, monitoring and other technical standards, established by the federal government and technical societies and organizations, to which reference is made in chs. NR 400 to 439 and 445 to 499.

Note: Technical Standards to which reference is made in ch. NR 440 are incorporated by reference in s. NR 440.17.

History: Cr. Register, September, 1986, No. 369, eff. 10–1–86; am. Register, September, 1987, No. 381, eff. 10–1–87; am. Register, February, 1990, No. 410, eff. 3–1–90; am. Register, May, 1992, No. 437, eff. 6–1–92; am. (2), Register, February, 1995, No. 470, eff. 3–1–95; correction in (2) made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1997, No. 493.

NR 484.02 Definitions. The definitions contained in ch. NR 400 apply to the terms used in this chapter.

History: Cr. Register, September, 1986, No. 369, eff. 10–1–86.

NR 484.03 Code of federal regulations. The federal regulations in effect on March 1, 2006 listed in the first column of Table 1 are incorporated by reference for the corresponding sections of chs. NR 400 to 439 and 445 to 499 in the third column of Table 1.

Note: Copies of these materials are available for inspection in the offices of the department of natural resources and legislative reference bureau, Madison, Wisconsin and in some public libraries or may be purchased for personal use from:

Superintendent of Documents
PO Box 371954
Pittsburgh PA 15250–7954

Table 1

CFR References

	CFR Reference	Title	Incorporated by Reference For
(1)	29 CFR part 1910 subpart Z	Toxic and Hazardous Substances	NR 465
(2)	29 CFR 1910.145(d)(4)		NR 447.12 (4) (a) 2. NR 447.14 (2) (a) 2. NR 447.17 (2) (a) 2.
(3)	29 CFR 1910.1001(j)(4)(ii)		NR 447.13 (1) (a) 4.
(4)	29 CFR 1926.1101(k)(8)(iii)		NR 447.13 (1) (a) 4.
(5)	40 CFR part 53	Ambient Air Monitoring Reference and Equivalent Methods	NR 400.02 (123e) and (123s) NR 404.06 (3) (b)
(6)	40 CFR 63.457	Test methods and procedures	NR 464
(7)	40 CFR part 75	Continuous Emission Monitoring	NR 446.18 (1) (a) and (c)

History: Cr. Register, December, 1988, No. 396, eff. 1–1–89; am. (3), Register, September, 1989, No. 405, eff. 10–1–89; renum. from NR 484.06, Register, February, 1990, No. 410, eff. 3–1–90; am. (intro.) and (3), cr. (6), Register, August, 1991, No. 428, eff. 9–1–91; am. (intro.), r. (2) and (4), renum. (1), (3), (5) and (6) to be (3), (1), (2) and (5) and am. (1) and (5), (3) renum. from NR 484.04 (3) and am., Register, May, 1992, No. 437, eff. 6–1–92; renum. (5) to be (6) and am., cr. (5), Register, May, 1993, No. 449, eff. 6–1–93; am. (intro.) and (5), Register, June, 1994, No. 462, eff. 7–1–94; r. and recr. Register, February, 1995, No. 470, eff. 3–1–95; r. (5) and (6), Register, December, 1995, No. 480, eff. 1–1–96; am. (intro.), Register, March, 1997, No. 495, eff. 4–1–97; am. (intro.) and (4), Register, November, 1999, No. 527, eff. 12–1–99; CR 00–160: am. Table 1, Register August 2001, No. 548, eff. 9–1–01; CR 00–175: am. (intro.) and Table 1 Register March 2002 No. 555, eff. 4–1–02; CR 02–146: am. (3) and (4) Register October 2003 No. 574, eff. 11–1–03; CR 05–040: am. (intro.) Register February 2006 No. 602, eff. 3–1–06; CR 07–036: cr. (7) Register November 2008 No. 635, eff. 12–1–08; CR 07–082: am. (5) Register September 2009 No. 645, eff. 10–1–09; CR 10–050: am. (5) Register November 2010 No. 659, eff. 12–1–10.

NR 484.04 Code of federal regulations appendices. The appendices to federal regulations in effect on August 1, 2016 listed in the first column of Table 2 are incorporated by reference for the corresponding sections of chs. NR 400 to 439 and 445 to 499 or code of federal regulations appendix method listed in the third column of Table 2. Since some of these materials are incorporated by reference for another appendix of the code of federal regulations and the other appendix is also incorporated by reference in this section, the materials listed in this section which are incorporated by reference for the other appendix are hereby also incorporated by reference and made a part of this chapter.

Note: Copies of these materials are available for inspection in the offices of the department of natural resources and legislative reference bureau, Madison, Wisconsin and in some public libraries or may be purchased for personal use from:

Superintendent of Documents
PO Box 371954
Pittsburgh PA 15250–7954

Table 2

CFR Appendix References

	CFR Appendix Referenced	Title	Incorporated by Reference For
(1)	29 CFR 1926.58 Appendix G	Work Practices and Engineering Controls for Small−Scale, Short−Duration Asbestos Renovation and Maintenance Activities—Non−Mandatory	NR 447.02 (18) Note
(2)	40 CFR part 50 Appendices A to N		NR 404.02 (8) NR 404.06 (2)
(4)	40 CFR part 50 Appendix H	Interpretation of the 1−Hour Primary and Secondary National Ambient Air Quality Standards for Ozone	NR 404.04 (5) (a)
(4m)	40 CFR part 50 Appendix I	Interpretation of the 8−hour Primary and Secondary National Ambient Air Quality Standards for Ozone	NR 404.04 (5) (b)
(5)	40 CFR part 50 Appendix J	Reference Method for the Determination of Particulate Matter as PM_{10} in the Atmosphere	NR 400.02 (123s)
(6)	40 CFR part 50 Appendix K	Interpretation of the National Ambient Air Quality Standards for Particulate Matter	NR 404.04 (8) (c)
(6g)	40 CFR part 50 Appendix L	Reference Method for the Determination of Particulate Matter as $PM_{2.5}$ in the Atmosphere	NR 400.02 (123e) NR 404.04 (9)
(6r)	40 CFR part 50 Appendix N	Interpretation of the National Ambient Air Quality Standards for $PM_{2.5}$	NR 404.04 (9)
(6t)	40 CFR part 50 Appendix P	Interpretation of the Primary and Secondary National Ambient Air Quality Standards for Ozone	NR 404.04 (5) (c)
(6v)	40 CFR part 50 Appendix R	Interpretation of the National Ambient Air Quality Standards for Lead	NR 404.04 (7) (b)
(7)	40 CFR part 50 Appendix S	Interpretation of the National Ambient Air Quality Standards for Nitrogen Dioxide	NR 404.04 (6) (a)
(7m)	40 CFR part 50 Appendix T	Interpretation of the National Ambient Air Quality Standards for Sulfur Dioxide	NR 404.04 (2) (a)
(7s)	40 CFR part 50 Appendix U	Interpretation of the Primary and Secondary National Ambient Air Quality Standards for Ozone	NR 404.04 (5) (d)
(8)	40 CFR part 51 Subpart S, Appendix E	Transient Test Driving Cycle	NR 485.02 (22)
(9)	40 CFR part 51 Appendix M	Recommended Test Methods for State Implementation Plans	NR 439 NR 460.06 (4) (b) (intro.) NR 465.09 (4) (b) 1. and 2. NR 465.22 (25), (29) and (31) NR 465.25 (3) (k) 4. and 5. a. and b. NR 465.28 (6) (b) 1. a., b. and d. and 2. a., b. and c. and Table 1 of subch. III of ch. NR 465 subchs. IV and V of ch. NR 465 NR 466.09 (5) NR 466.24 (3) (f) 1. and 2.
(10)	40 CFR part 51 Appendix S, Section IV	Sources That Would Locate in a Designated Nonattainment Area	NR 405.11 (1) (e)
(11)	40 CFR part 51 Appendix W	Guideline on Air Quality Models (Revised)	NR 405.10 NR 489.09 (3) (intro.)
(11m)	40 CFR part 51 Appendix Y	Guidelines for BART Determinations Under the Regional Haze Rule	NR 433.03 (1) NR 433.04 (2) NR 433.05 (1) (c)

Table 2 (Continued)

CFR Appendix References

	CFR Appendix Referenced	Title	Incorporated by Reference For
(12)	40 CFR part 58 Appendix B	Quality Assurance Requirements for Prevention of Significant Deterioration (PSD) Air Monitoring	NR 405.11 (3)
(13)	40 CFR part 60 Appendix A	Test Methods	NR 400.02 (131) NR 419.045 (5) (a) and (b) NR 423.037 (9) (c) 1r. NR 428.25 (1) (b) 4. NR 439 NR 460 to 469
(14)	40 CFR part 60 Appendix A, Method 3	Gas Analysis for the Determination of Dry Molecular Weight	NR 449.09 (6) (a) 3.
(15)	40 CFR part 60 Appendix A, Method 5	Determination of Particulate Emissions from Stationary Sources	40 CFR part 61 Appendix B, Method 101 NR 462 Table 5
(15m)	40 CFR part 60 Appendix A, Method 7, 7A, 7B, 7C, 7D and 7E	Determination of nitrogen oxide emissions from stationary sources	NR 428.23 (1) (b) 3. a. NR 428.08 (2) (g) 4. a.
(16)	40 CFR part 60 Appendix A, Method 18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography	NR 400.02 (77) NR 419.045 (2) (a) 2. NR 422.142 (5) (a) NR 422.143 (7) (a) NR 469.01 (1) (a)
(16m)	40 CFR part 60 Appendix A, Method 19	Determination of sulfur dioxide removal efficiency and particulate, sulfur dioxide and nitrogen oxides emission rates	NR 428.23 (1) (b) 2. d., 5. a. and b. and 6. b.
(17)	40 CFR part 60 Appendix A, Method 21	Determination of Volatile Organic Compounds Leaks	NR 419.045 (5) (e) NR 420.02 (39m) NR 421.02 (21) NR 421.05 (2) (e) NR 421.06 (2) (e)
(18)	40 CFR part 60 Appendix A, Method 22	Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares	NR 415.075 (3) (c) NR 460, Appendix DDDDD
(19)	40 CFR part 60 Appendix A, Method 25	Determination of Total Gaseous Nonmethane Organic Emissions as Carbon	NR 422.142 (5) (a) NR 422.143 (7) (a)
(20)	40 CFR part 60 Appendix A, Method 25A	Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer	NR 422.142 (5) (a) NR 422.143 (7) (a)
(20e)	40 CFR part 60 Appendix A, Method 25D	Determination of Volatile Organic Concentration of Waste Samples	NR 419.045 (5) (f) 6.
(20m)	40 CFR part 60 Appendix A, Method 29	Determination of Metals Emissions from Stationary Sources	NR 446.04 (1) (c) 1. a. NR 446.08 (1) (c) 1. NR 462 Table 5
(20s)	40 CFR part 60 Appendix A, Method 30A	Determination of Total Vapor Phase Mercury Emissions from Stationary Sources	NR 446.04 (1) (c) 1. a. NR 446.08 (1) (c) 1.
(20t)	40 CFR part 60 Appendix A, Method 30B	Determination of Total Vapor Phase Mercury Emissions from Coal–Fired Combustion Sources Using Carbon Sorbent Traps	NR 446.04 (1) (c) 1. a. NR 446.08 (1) (c) 1.
(21)	40 CFR part 60 Appendix B	Performance Specifications	NR 405 NR 408 NR 428 NR 439 NR 460 to 469

Table 2 (Continued)

CFR Appendix References

	CFR Appendix Referenced	Title	Incorporated by Reference For
(21m)	40 CFR part 60 Appendix F	Quality Assurance Procedures	NR 428.23 (1) (b) 2. c. NR 466.10 (2) NR 466.24 (2) (d) 1. b.
(21s)	40 CFR part 61 Subpart M, Appendix A	Interpretive Rule Governing Roof Removal Operations	NR 447.08 (1) (am)
(22)	40 CFR part 61 Appendix A	National Emission Standards for Hazardous Air Pollutants: Compliance Status Information	NR 447.16 (2)
(23)	40 CFR part 61 Appendix B	Test Methods	NR 400.02 (131) NR 439 NR 446 to NR 469
(24)	40 CFR part 63, Subpart KK, Appendix A	Data Quality Objective and Lower Confidence Limit Approaches for Alternative Capture Efficiency Protocols and Test Methods	NR 439.06 (3) (am) NR 465.09 (4) (b) 3. NR 465.25 (1) (b) 9. a. NR 465.28 (6) (b) 3. NR 465.35 (1) (c) 9. a. NR 465.38 (6) (e) NR 465.45 (1) (c) 9. a. NR 465.48 (6) (e) NR 466.09 (6) NR 466.24 (3) (f) 3.
(24g)	40 CFR part 63, Subpart MMMM, Appendix A	Alternative Capture Efficiency and Destruction Efficiency Measurement and Monitoring Procedures for Magnet Wire Coating Operations	NR 465 subch. V
(24m)	40 CFR part 63, Subpart DDDDD, Appendix A	Methodology and Criteria for Demonstrating Eligibility for the Health–Based Compliance Alternatives	NR 462
(24r)	40 CFR part 63, Subpart PPPP, Appendix A	Determination of Weight Volatile Matter Content and Weight Solids Content of Reactive Adhesives	NR 465 subchs. IV and V
(25)	40 CFR part 63 Appendix A	Test Methods	NR 400.02 (131) NR 419.045 (5) (f) 4. NR 439 NR 460 to 469
(25g)	40 CFR part 63 Appendix C	Determination of the Fraction Biodegraded (F_{bio}) in a Biological Treatment Unit	40 CFR 63.457 (1) NR 464.09 (10) (b)
(25r)	40 CFR part 63 Appendix E	Monitoring Procedure for Nonthoroughly Mixed Open Biological Treatment Systems at Kraft Pulp Mills under Unsafe Sampling Conditions	NR 464.09 (16) (c)
(26)	40 CFR part 72 Appendix D	Calculation of Potential Electric Output Capacity	NR 409.02 (57)
(26m) (a)	40 CFR part 75 Appendix A	Specifications and Test Procedures	NR 446.07 (3) NR 446.08 (1) (a)
(b)	40 CFR part 75, Appendix B	Quality Assurance and Quality Control Procedures	NR 446.07 (3) NR 446.08 (1) (a)
(bm)	40 CFR part 75, Appendix E	Optional NO_x Emissions Estimation Protocol for Gas–Fired Peaking Units and Oil–Fired Peaking Units	NR 428.23 (1) (b) 2. e.
(c)	40 CFR part 75, Appendix C	Missing Data Estimation Procedures	NR 446.07 (3) NR 446.08 (1) (a)
(d)	40 CFR part 75, Appendix F	Conversion Procedures	NR 428.23 (1) (b) 5. c. and 6. b. and c. NR 446.07 (3) NR 446.08 (1) (a)

Table 2 (Continued)

CFR Appendix References

	CFR Appendix Referenced	Title	Incorporated by Reference For
(27)	40 CFR part 75 Appendices A to I		NR 428 NR 428.23 (1) (b) 1. NR 439 NR 446.18 (1) (a) and (c)
(27m)	40 CFR part 82, Subpart A, Appendices A and B		NR 405 NR 408
(27s)	40 CFR part 136, Appendix A	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater	NR 419.045 (5) (f) 3.
(28)	40 CFR part 763 Subpart E, Appendix E, Section 1	Polarized Light Microscopy	NR 447.02 (1) (a) and (b) NR 447.02 (16) NR 447.02 (27) NR 447.02 (36) NR 447.09 (1) (a) and (b) (intro.)

History: Cr. Register, August, 1991, No. 428, eff. 9–1–91; am. (intro.), (5) and (6), renum. (3) to be NR 484.03 (4) and am., renum. (4) and (7) to be (3) and (4) and am. (4), Register, May, 1992, No. 437, eff. 6–1–92; renum. (2), (3) (intro.) (a) to (c) to be (2) (d), (intro.), (c), (a) and (b) and am. (2) (d), Register, May, 1993, No. 449, eff. 6–1–93; am. (intro.), (2) (d), cr. (7), Register, December, 1993, No. 456, eff. 1–1–94; cr. (1) (c), Register, June, 1994, No. 462, eff. 7–1–94; r. and recr. Register, February, 1995, No. 470, eff. 3–1–95; cr. (9), (19), Register, April, 1995, No. 472, eff. 5–1–95; cr. (13m), (15e) and (15m), Register, June, 1995, No. 474, eff. 7–1–95; am. (9), Register, September, 1995, No. 477, eff. 10–1–95; am. (18), cr. (18m), renum. (7) to (21) to be (9) to (27), cr. (7) and (8), Register, December, 1995, No. 480, eff. 1–1–96; am. (27), Register, January, 1997, No. 493, eff. 2–1–97; am. (intro.), (13), (16), (21) and (24), Register, March, 1997, No. 495, eff. 4–1–97; am. (intro.), (11), (13), (16), (23) and (24), Register, November, 1999, No. 527, eff. 12–1–99; am. (9), rn. (24) to (27) to be (25) to (28), cr. (21m) and (24) and am. (24), Register, March, 2000, No. 531, eff. 4–1–00; am. (21) and (27), Register, January, 2001, No. 541, eff. 2–1–01; CR 00–160: am. (9) and (24) of Table 2, Register August 2001 No. 548, eff. 9–1–01; CR 00–175: am. (intro.) and Table 2 Register March 2002 No. 555, eff. 4–1–02; CR 02–146: cr. (21s) Register October 2003 No. 574, eff. 11–1–03; CR 03–037: am. Table 2 (9) and (24) Register March 2004 No. 579, eff. 4–1–04; CR 02–097: am. (23), Register June 2004 No. 582, eff. 7–1–04; CR 01–081: cr. (20m) and (26m) Register September 2004 No. 585, eff. 10–1–04; CR 03–066: am. (2) and (4), cr. (4m) Register May 2005 No. 593, eff. 6–1–05; CR 05–040: am. (intro.), (9) and (24), cr. (24g) and (24r) Register February 2006 No. 602, eff. 3–1–06; CR 05–116: am. (15), (18) and (20m), cr. (24m) Register November 2006 No. 611, eff. 12–1–06; CR 03–118: am. (21), cr. (27m), Register June 2007 No. 618, eff. 7–1–07; CR 07–016: am. (13), (21m), (26m) (d) and (27), cr. (15m), (16m) and (26m) (bm) Register July 2007 No. 619, eff. 8–1–07; CR 07–045: am. (9), (21m) and (24) Register April 2008 No. 628, eff. 5–1–08; CR 07–017: cr. (11m) Register June 2008 No. 630, eff. 7–1–08; CR 07–036: am. (20m), (26m) (a) to (d) and (27), cr. (20s) and (20t) Register November 2008 No. 635, eff. 12–1–08; CR 07–105: am. (16) Register December 2008 No. 636, eff. 1–1–09; CR 08–102: am. (16), (19) and (20) Register July 2009 No. 643, eff. 8–1–09; CR 08–104: am. (16), (19) and (20) Register July 2009 No. 643, eff. 8–1–09; corrections in (16), (19) and (20) made under s. 13.92 (4) (b) 7., Stats., Register July 2009 No. 643; CR 07–082: am. (6), cr. (6g) and (6r) Register September 2009 No. 645, eff. 10–1–09; CR 09–088: am. (3), cr. (6t) and (6v) Register May 2010 No. 653, eff. 6–1–10; CR 10–049: r. (7) Register November 2010 No. 659, 12–1–10; CR 10–050: am. (5), (6g) Register November 2010 No. 659, eff. 12–1–10; CR 07–082: r. (3) Register November 2011 No. 671, eff. 12–1–11; CR 11–005: am. (intro.), (13), (17), (19), (20) in Table 2, cr. (20e), (27s) in Table 2 Register January 2012 No. 673, eff. 2–1–12; CR 15–033: am. (intro.), cr. (7), (7m) Register July 2016 No. 727, eff. 8–1–16; correction in (intro.) made under s. 35.17, Stats., Register August 2016, No. 728; CR 16–041: am. (6g), (6r) in Table 2 Register December 2017 No. 744, eff. 1–1–18; CR 21–022: cr. (7s) in Table 2 Register February 2022 No. 794, eff. 3–1–22; **CR 23–017: am. (15m) in Table 2 Register March 2024 No. 819, eff. 4–1–24.**

NR 484.05 National technical information service.

The national technical information service (NTIS) documents listed in the first column of Table 3 are incorporated by reference for the corresponding sections of chs. NR 400 to 439 and 445 to 499 in the third column of Table 3.

Note: Copies of these materials are available for inspection in the offices of the department of natural resources and legislative reference bureau, Madison, Wisconsin or may be purchased for personal use from:

National Technical Information Service
5285 Port Royal Road
Springfield VA 22161
1–800–553–6847

Table 3
NTIS Document References

	Document Reference	Document Title	Incorporated by Reference For
(1)	NTIS Order No. PB 87−100012	Standard Industrial Classification Manual, 1987	NR 400.02 (74) NR 400.02 (86) NR 400.02 (91) NR 400.02 (149) NR 405.02 (8) NR 406.02 (1) NR 407.02 (3) NR 407.02 (4) (intro.) NR 407.05 (4) (b) NR 408.02 (5) NR 410.02 (4) NR 419.045 (1) (a) 3. NR 421.02 (3) NR 421.02 (17) NR 422.02 (112) NR 422.095 (1) NR 422.15 (1) (intro.) NR 437.07 (2) (a) 4. NR 438.02 (1) NR 445.11 (1) (intro.) NR 465.02 (51)
(2)	NTIS Order No. PB−266 227	Recommended Industrial Ventilation Guidelines, U.S. Department of Health, Education, and Welfare, National Institute of Occupational Safety and Health, 1976	NR 421.04 (3) (c) 2.
(3)	NTIS Order No. PB 93−192664	Metropolitan Areas, 1993	NR 400.02 (96)
(8)	EPA, OAQPS, AP−42	Compilation of Air Pollutant Emission Factors,Volume I: Stationary Point and Area Sources, Fifth Edition, January 1995, as revised by Supplement A (February 1996), Supplement B (November 1996), Supplement C (November 1997), Supplement D (July 1998), Supplement E (November 1999), Supplement F (October 2000) and Update 2001 (December 2001)	NR 437.04 (2) (a) 6. NR 438.03 (5) (a) NR 489.09 (2) (b)
(8g)	EPA, OAQPS, AP−42	Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources, Fourth Edition, September 1985, as revised by Supplement A (1991)	NR 437.04 (2) (a) 7.
(8r)	EPA, OAQPS, AP−42	Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources, Fifth Edition, Appendix G (1998), Appendix H (1995), Appendix I (1998), Appendix J (1998), and Appendix K (1998)	NR 437.04 (2) (a) 8.
(9)	EPA−450/3−84−014, December 1984	Review of National Emission Standards for Mercury	NR 446.21 (3) (d) Note
(10)	EPA−454/R−98−015, September 1997	Fabric Filter Bag Leak Detection Guidance	NR 463.15 (6) (a) 2.
(12)	EPA−625/3−89−016	Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo−p−Dioxins and −Dibenzofurans (CDDs and CDFs) and 1989 Update	NR 463.12 (39) NR 463.166 (4)
(14)	NTIS Order No. DE95003295INZ	Voluntary reporting of greenhouse gases under Section 1605(b) of the Energy Policy Act of 1992 – General Guidelines, October 1994	NR 437.04 (2) (a) 17.
(14)	NTIS Order No. DE95003295INZ	Voluntary reporting of greenhouse gases under Section 1605(b) of the Energy Policy Act of 1992 – General Guidelines, October 1994	NR 437.04 (2) (a) 17.
(15)	NTIS Order No. DE95003296INZ	Sector−Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases under Section 1605(b) of the Energy Policy Act of 1992, Volume I, Electricity Supply Sector, Residential and Commercial Buildings Sector, and Industrial Sector, October 1994.	NR 437.04 (2) (a) 18.

(16)	NTIS Order No. DE95003297INZ	Sector−Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases under Section 1605(b) of the Energy Policy Act of 1992, Volume II, Transportation Sector, Forestry Sector, and Agricultural Sector, October 1994.	NR 437.04 (2) (a) 19.
(17)	NTIS Order Nos.: printed – PB2007−100002 CD−ROM – PB2007−500023	North American Industry Classification System United States, 2007	NR 405.02 (22) (a) 1. NR 405.07 (4) (a) 20. NR 407.02 (4) (b) 20. NR 408.02 (21) (e) 5.

History: Cr. (intro.) and (1), (2) renum. from NR 484.03 (2) and am. Register, February, 1990, No. 410, eff. 3−1−90; cr. (2) to (4), (6) and (7), renum. (2) to be (5), Register, August, 1991, No. 428, eff. 9−1−91; am. (1), (4) to (6), renum. (7) (a) to (c) to be (7) (c) to (e) and am., cr. (7) (a) and (b), Register, May, 1992, No. 437, eff. 6−1−92; am. (1), Register, January, 1993, No. 445, eff. 2−1−93; am. (3), cr. (3) (b) to (e) and (8), Register, May, 1993, No. 449, eff. 6−1−93; cr. (1m), am. (3) (b), Register, December, 1993, No. 456, eff. 1−1−94; renum. (2) to be (9) and am. Register, August, 1994, No. 464, eff. 9−1−94; r. and recr. Register, February, 1995, No. 470, eff. 3−1−95; r. (6), (7), Register, April, 1995, No. 472, eff. 5−1−95; am. (3), Register, June, 1995, No. 474, eff. 7−1−95; am. (1), Register, August, 1995, No. 476, eff. 9−1−95; am. (8), Register, September, 1995, No. 477, eff. 10−1−95; am. (3), Register, December, 1995, No. 480, eff. 1−1−96; am. (1), (8), Register, January, 1997, No. 493, eff. 2−1−97; am. (1), (3), (8), r. and recr. (9), r. (10), Register, November, 1999, No. 527, eff. 12−1−99; CR 00−160: am. (1) of Table 3, Register August 2001 No. 548, eff. 9−1−01; CR 02−012: am. (1) and (8) of Table 3, cr. (8g), (8r), (14), (15) and (16) of Table 3, Register October 2002 No. 562, eff. 11−1−02; CR 02−097: am. (1), Register June 2004 No. 582, eff. 7−1−04; CR 01−081: am. (9) Register September 2004 No. 585, eff. 10−1−04; CR 04−107: am. (1) Register August 2005 No. 596, eff. 9−1−05; CR 07−104: cr. (17) Register July 2008 No. 631, eff. 8−1−08; CR 07−036: am. (9) Register November 2008 No. 635, eff. 12−1−08; CR 04−023: cr. (10) and (12) Register December 2008 No. 636, eff. 1−1−09; CR 11−005: am. (1) in Table 3 Register January 2012 No. 673, eff. 2−1−12; CR 15−077: r. (4), (5) Register July 2016 No. 727, eff. 8−1−16.

NR 484.06 Other government organizations. The following materials from other government organizations listed in the first column of Tables 4A to 4G are incorporated by reference for the corresponding sections of chs. NR 400 to 439 and 445 to 499 in the third column of Tables 4A to 4G.

Note: Copies of these materials are available for inspection in the offices of the department of natural resources and legislative reference bureau, Madison, Wisconsin or may be purchased for personal use by writing to the organizations listed in the individual subsections.

(1) The following is a document published in the federal register.

Note: Copies can be made for personal use from the federal register on microfiche, which is available at the department of natural resources library.

Table 4A

Federal Register Document Reference

Citation	Title	Incorporated by Reference For
51 FR 43814, Dec. 4, 1986	Emissions Trading Policy Statement; General Principles for Creation, Banking, and Use of Emission Reduction Credits	NR 408.06 (1) (d) Note NR 425.05 (1) (b) 2.

(2) The following is a document from the U.S. bureau of mines.

Note: Copies may be purchased for personal use from:
Bureau of Mines
U.S. Department of the Interior
Washington DC 20240

Table 4B

U.S. Bureau Of Mines Document Reference

Document Number	Title	Incorporated by Reference For
Information Circular 7588	Fundamentals of Smoke Abatement, December, 1950, Ringlemann Chart	NR 400.02 (137) Note

(3) The following document is from the federal highway administration.

Note: Copies may be purchased for personal use from:
Superintendent of Documents
PO Box 371954
Pittsburgh PA 15250−7954

Table 4C

Federal Highway Administration Document Reference

Document Number	Title	Incorporated by Reference For
FP−92, 1992	Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, Section 401	NR 447.04 (2) (c)

(4) The following are from the U.S. environmental protection agency.

Note: Paragraph (a) lists a database document. Electronic copies may be downloaded for personal use from the following internet address:
http://widit.knu.ac.kr/epa/ebtpages/Air/Air_Pollution/siteout/s2out8.html

Those without access to a computer can obtain printed copies of all or of specific parts of FIRE from:
Department of Natural Resources
Bureau of Air Management
Box 7921
101 South Webster Street
Madison WI 53707−7921

Note: Copies of the documents listed in par. (b) may be downloaded for personal use from the following internet address: http://www.epa.gov/ttn/chief/eiip/techreport/index.html.

Those without access to a computer can obtain printed copies from:
Info CHIEF
Emission Factor And Inventory Group (MD−D205−01)
Office of Air Quality Planning and Standards
U. S. Environmental Protection Agency
Research Triangle Park NC 27711

Phone: (919) 541−1000
Fax: (919) 541−5680

Note: Copies of the document listed in par. (c) may be downloaded from the internet for personal use from http://www.epa.gov/ttn/emc/cem/tribo.pdf. Copies of the documents listed in par. (e) may be downloaded from the internet for personal use from http://www3.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm.

Those without access to a computer can obtain printed copies of these documents from:

National Technical Information Service
5285 Port Royal Road
Springfield VA 22161

Note: The wastewater treatment model listed in par. (f), along with supporting documentation, may be downloaded for personal use from https://www.epa.gov/air−emissions−inventories/emission−inventory−improvement−program−eiip. EPA contact information is also listed at this internet site.

Table 4D

U.S. Environmental Protection Agency Document References

Document Number	Title	Incorporated by Reference For
(a) EPA, OAQPS, FIRE 6.23	Factor Information Retrieval Data System, Version 6.23	NR 437.04 (2) (a) 22.
(b) EPA, EIIP Technical Report Series		
1. EPA−454/R−97−004a	EIIP Volume I, Introduction and Use of EIIP Guidance for Emission Inventory Development, July 1997	NR 437.04 (2) (a) 9.
2. Volume II	Point Sources, May 2002	NR 437.04 (2) (a) 10.
3. Volume III	Area Sources and Area Source Method Abstracts, June 2001	NR 437.04 (2) (a) 11.
4. Volume IV	Mobile Sources, September 1997	NR 437.04 (2) (a) 12.
5. Volume VI	Quality Assurance Procedures and DARS Software, September 1997	NR 437.04 (2) (a) 13.
6. Volume VII	Data Management Procedures, January 1999	NR 437.04 (2) (a) 14.
7. Volume VIII	Estimating Greenhouse Gas Emissions, October 1999	NR 437.04 (2) (a) 15.
8. Volume IX	Particulate Emissions, September 1999	NR 437.04 (2) (a) 16.
(c) EPA−454/R−98−015, September 1997	Fabric Filter Bag Leak Detection Guidance	NR 462.05 (6) (i) NR 463.23 (3) (b) 4.
(d) EPA−453/R−01−005	National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Plants−−Background Information for Proposed Standards	NR 462.01 (4) (k)
(e) EPA, SW−846	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, September 1986, as amended by Updates I, II, IIA, IIB, III, IIIA, IIIB, IVA, and IVB	NR 419.045 (5) (f) 1. and 2. NR 462 Table 6 NR 463.22 (16)
(f) N/A	WATER9, Version 2.0	NR 419.045 (3) (b) 2. c.
(g) EPA−450/4−91−031	Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry	NR 421.07 (1) (a) 1.

(5) The following are documents from the State of California, Department of Consumer Affairs, Bureau of Home Furnishings and Thermal Insulation.

Note: Copies may be downloaded for personal use from the following Internet address: http://www.bearhfti.ca.gov/industry/bulletin.shtml.

Those without access to a computer can obtain printed copies from:

State of California
Department of Consumer Affairs
Bureau of Home Furnishings and Thermal Insulation
3485 Orange Grove Avenue
North Highlands CA 95660−5595
(916) 920−6951

Table 4E

State of California Document Reference

Document Number	Title	Incorporated by Reference For
(a) Technical Bulletin 116	Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Upholstered Furniture	NR 465.04 (1) (b) 1.
(b) Technical Bulletin 117	Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture	NR 465.04 (1) (b) 1.
(c) Technical Bulletin 133	Flammability Test Procedure for Seating Furniture for Use in Public Occupancies	NR 465.04 (1) (b) 1.

(6) The following document is from the Intergovernmental Panel on Climate Change.

Note: Copies may be downloaded for personal use from the following internet address: http://www.ipcc–nggip.iges.or.jp/public/gl/invs1.htm.

Those without access to a computer can obtain printed copies from:
IPCC Secretariat
C/O World Meteorological Organization
7bis Avenue de la Paix
C.P. 2300
CH– 1211 Geneva 2, Switzerland
Phone: +41–22–730–8208
Fax: +41–22–730–8025
e–mail: ipcc_sec@gateway.wmo.ch

Table 4F
IPCC Document Reference

Publishing Organization	Title	Incorporated by Reference For
Intergovernmental Panel on Climate Change (IPCC)	Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, Volumes 1–3	NR 437.04 (2) (a) 4.

(7) The following document is from the U.S. department of energy.

Note: Copies may be downloaded for personal use from the following internet address: http://www.ipmvp.org/info/Vol1book.pdf.

Those without access to a computer can obtain printed copies from:
Energy Efficiency and Renewable Energy Clearinghouse (EREC)
NCI, 8260 Greensboro Dr., Suite 400
Mclean VA 22102
Phone: (703) 287–8385
Fax: (703) 893–0400
or
Phone: 1–800–DOE–EREC

Table 4G
U.S. Department of Energy Document Reference

Publishing Organization	Title	Incorporated by Reference For
U.S. Department of Energy, OEERE	International Performance Measurement and Verification Protocol, Volume 1 – Concepts and Options for Determining Energy Savings, January 2001	NR 437.04 (2) (a) 5.

History: Cr. Register, February, 1995, No. 470, eff. 3–1–95; am. (1), Register, December, 1996, No. 492, eff. 1–1–97; am. (2), cr. (4), Register, November, 1999, No. 527, eff. 12–1–99; CR 00–160: am. (intro.), cr. (5), Register August 2001 No. 548, eff. 9–1–01; CR 02–012: am. (intro.), (4) and (a) and (b) of Table 4, cr. (6) and Table 4F, (7) and Table 4G Register October 2002 No. 562, eff. 11–1–02; CR 05–116: cr. (4) (c) to (e) of Table 4D Register November 2006 No. 611, eff. 12–1–06; CR 06–110: am. (4) (c) and (e), Register July 2007 No. 619, eff. 8–1–07; CR 11–005: am. (4) (e) in Table 4D, cr. (4) (f), (g) in Table 4D Register January 2012 No. 673, eff. 2–1–12; CR 21–072: am. (4) (a) in Table 4D Register July 2022 No. 799, eff. 8–1–22.

NR 484.10 American Society for Testing and Materials. The American Society for Testing and Materials (ASTM) standards listed in the first column of Table 5 are incorporated by reference for the corresponding sections of chs. NR 400 to 439 and 445 to 499 in the third column of Table 5. Some standards are incorporated into other documents which are separately incorporated by reference in this chapter. Those documents are also listed in the third column of Table 5.

Note: These materials are available for inspection in the offices of the department of natural resources and legislative reference bureau, Madison, Wisconsin or may be purchased for personal use at one of the following addresses:

American Society for Testing and Materials (ASTM)
100 Barr Harbor Drive
W Conshohocken PA 19428–2959
Telephone: (610) 832–9585
Fax: (610) 832–9555
E–mail: service@astm.org
Website http://www.astm.org

or from:

IHS Global Engineering Documents
15 Inverness Way East
Englewood, CO 80112
Telephone: (800) 854–7179
E–mail: globalcustomerservice@ihs.com
Website: http://global.ihs.com

Table 5
ASTM Standard References

	Standard Number	Standard Title	Incorporated by Reference For
(1)	ASTM C136–01	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates	NR 415.02 (9)
(2)	ASTM D97–02	Standard Test Methods for Pour Point of Petroleum Products	NR 420.02 (41)
(3)	ASTM D129–00 (2005)	Standard Test Method for Sulfur in Petroleum Products (General Bomb Method)	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendices A and D NR 439.08 (2) (b)
(4)	ASTM D240–02	Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendices A, D, E, and F NR 400.02 (79) NR 439.08 (2) (c)

Table 5 (Continued)
ASTM Standard References

	Standard Number	Standard Title	Incorporated by Reference For
(5)	ASTM D287−92 (2000)	Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)	40 CFR part 75 Appendix D
(6)	ASTM D323−08	Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)	NR 419.045 (5) (d) NR 420.02 (31)
(7)	ASTM D388−99e1 (2004)	Standard Classification of Coals by Rank	40 CFR part 75 Appendix F NR 400.02 (40) NR 462.02 (6)
(8)	ASTM D396−02a	Standard Specification for Fuel Oils	NR 400.02 (70) NR 400.02 (135) NR 420.03 (1) (a) NR 462.02 (11) and (41)
(9)	ASTM D523−89 (1999)	Standard Test Method for Specular Gloss	ANSI A135.5−2004 NR 422.02 (26), (41s), and (49m)
(10)	ASTM D737−96	Standard Test Method for Air Permeability of Textile Fabrics	NR 447.15 (1) (a) 1.
(12)	ASTM D968−93 (2001)	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive	ANSI A135.5−2004
(13)	ASTM D975−02	Standard Specification for Diesel Fuel Oils	NR 409.02 (34) NR 420.03 (1) (a)
(14)	ASTM D1037−99	Standard Test Methods for Evaluating Properties of Wood−Base Fiber and Particle Panel Materials	ANSI A135.4−2004 ANSI A135.5−2004
(15)	ASTM D1072−90 (1999)	Standard Test Method for Total Sulfur in Fuel Gases	40 CFR part 75 Appendix D
(16)	ASTM D1193−99	Standard Specification for Reagent Water	40 CFR part 60 Appendix A: Method 5, par. 7.1.3 Method 5E, par. 7.2.1 Method 5F, par. 7.2.1 Method 6, par. 7.1.1 Method 7, par. 7.1.1 Method 7C, par. 7.1.1 Method 7D, par. 7.1.1 Method 10A, par. 7.1.1 Method 11, par. 7.1.3 Method 12, par. 7.1.3 Method 13A, par. 7.1.2 Method 14A, par. 7.1 Method 25D, par. 7.2.2.4 Method 26, par. 7.1.2 Method 26A, par. 7.1.2 Method 29, pars. 7.2.2, 7.4.2 and 7.5.6 40 CFR part 61 Appendix B, Method 101, par. 6.1.1
(17)	ASTM D1217−93 (1998)	Standard Test Method for Density and Relative Density (Specific Gravity) of Liquids by Bingham Pycnometer	40 CFR part 75 Appendix D
(18)	ASTM D1250−80 (1997)	Standard Guide for Petroleum Measurement Tables	40 CFR part 75 Appendix D
(20)	ASTM D1298−99	Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method	40 CFR part 75 Appendix D
(21)	ASTM D1308−02	Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes	ANSI A135.5−2004

Table 5 (Continued)
ASTM Standard References

	Standard Number	Standard Title	Incorporated by Reference For
(22)	ASTM D1475–98 (2003)	Standard Test Method for Density of Liquid Coatings, Inks, and Related Products	40 CFR part 60 Appendix A: Method 24, par. 6.1 Method 24A, pars. 6.5 and 7.1 NR 465.26 (2) (b) 3. and (c) NR 465.37 (2) (c) NR 465.46 (2) (b) 4. and (c) NR 465.47 (2) (c)
(23)	ASTM D1480–93 (1997)	Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Bingham Pycnometer	40 CFR part 75 Appendix D
(24)	ASTM D1481–93 (1997)	Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Lipkin Bicapillary Pycnometer	40 CFR part 75 Appendix D
(25)	ASTM D1552–03	Standard Test Method for Sulfur in Petroleum Products (High–Temperature Method)	40 CFR part 75 Appendices A and D NR 439.08 (2) (b)
(25m)	ASTM D1613–02	Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products	NR 422.02 (67m), 422.084 (2) (c), and 422.151 (2) (b) and (c)
(26)	ASTM D1826–94 (1998)	Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendices E and F NR 400.02 (79)
(26m)	ASTM D1835–03a	Standard Specification for Liquid Petroleum Gases	NR 462.02 (36) (b)
(27)	ASTM D1945–96 (2001)	Standard Test Method for Analysis of Natural Gas by Gas Chromatography	40 CFR part 75 Appendices F and G
(28)	ASTM D1946–90 (2000)	Standard Practice for Analysis of Reformed Gas by Gas Chromatography	40 CFR part 75 Appendices F and G NR 460.10 (2) (f) 1. a.
(30)	ASTM D2013–01	Standard Method of Preparing Coal Samples for Analysis	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendix F NR 439.08 (1) (b) NR 462, Table 6
(31)	ASTM D2015–96	Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendices A, D, E and F
(32)	ASTM D2197–98 (2002)	Standard Test Method for Adhesion of Organic Coatings by Scrape Adhesion	ANSI A135.5–2004
(33)	ASTM D2234/D2234M–03e1	Standard Practice for Collection of a Gross Sample of Coal	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendix F NR 439.08 (1) (a) NR 439.085 (2) (a) 1. NR 439.085 (2) (b) 1. NR 439.085 (2) (c) 1. NR 462, Table 6
(33)	ASTM D2234/D2234M–03e1	Standard Practice for Collection of a Gross Sample of Coal	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendix F NR 439.08 (1) (a) NR 439.085 (2) (a) 1. NR 439.085 (2) (b) 1. NR 439.085 (2) (c) 1. NR 462, Table 6
(34)	ASTM D2369–01e1	Standard Test Method for Volatile Content of Coatings	40 CFR part 60 Appendix A, Method 24, par. 6.2

Table 5 (Continued)
ASTM Standard References

Standard Number		Standard Title	Incorporated by Reference For
Note: ASTM D2382 was discontinued in 1994, and replaced by ASTM D4809.			
(36)	ASTM D2486–00	Standard Test Method for Scrub Resistance of Wall Paints	ANSI A135.5–2004
(37)	ASTM D2502–92 (1996)	Standard Test Method for Estimation of Molecular Weight (Relative Molecular Mass) of Petroleum Oils from Viscosity Measurements	40 CFR part 75 Appendix G
(38)	ASTM D2503–92 (1997)	Standard Test Method for Relative Molecular Mass (Molecular Weight) of Hydrocarbons by Thermoelectric Measurement of Vapor Pressure	40 CFR part 75 Appendix G
(39)	ASTM D2622–98	Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X–ray Fluorescence Spectrometry	40 CFR part 75 Appendices A and D
(39e)	ASTM D2697–86 (1998)	Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings	NR 465.26 (2) (b) 1. NR 465.46 (2) (b) 1.
(39m)	ASTM D2879–10	Standard Test Method for Vapor Pressure–Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope	NR 419.045 (5) (d) NR 422.142 (5) (d)
(40)	ASTM D2880–00	Standard Specification for Gas Turbine Fuel Oils	NR 420.03 (1) (a)
(41)	ASTM D2986–95a (1999)	Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test	40 CFR part 60 Appendix A: Method 5, par. 7.1.1 Method 12, par. 7.1.1 Method 13A, par. 7.1.1.2
(41m)	ASTM D3172–89 (2002)	Standard Practice for Proximate Analysis of Coal and Coke	NR 439.098 (1) (b)
(42)	ASTM D3173–02	Standard Test Method for Moisture in the Analysis Sample of Coal and Coke	40 CFR part 60 Appendix A, Method 19 NR 439.08 (1) (f) NR 462, Table 6
(43)	ASTM D3174–04	Standard Test Method for Ash in the Analysis Sample of Coal and Coke from Coal	40 CFR part 75 Appendix G NR 439.08 (1) (e)
(44)	ASTM D3176–89 (2002)	Standard Practice for Ultimate Analysis of Coal and Coke	40 CFR part 75 Appendices A and F NR 439.08 (1) (g) NR 439.098 (1) (a)
(45)	ASTM D3177–02	Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendix A NR 439.08 (1) (c)
(46)	ASTM D3178–89 (1997)	Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke	40 CFR part 75 Appendix G
(47)	ASTM D3238–95 (2000)	Standard Test Method for Calculation of Carbon Distribution and Structural Group Analysis of Petroleum Oils by the n–d–M Method	40 CFR part 75 Appendix G
(47L)	ASTM D3683–94 (2000)	Standard Test Method for Trace Elements in Coal or Coke Ash by Atomic Absorption	NR 462, Table 6
(47m)	ASTM D3684–01	Standard Test Method for Total Mercury in Coal by Oxygen Bomb Combustion/Atomic Absorption Method	NR 446.04 (1) (b) NR 446.04 (1) (c) 1. b. NR 446.07 (1) NR 446.07 (2) NR 446.08 (1) (b) NR 446.08 (1) (c) 2. NR 462, Table 6
(48)	ASTM D3792–99	Standard Test Method for Water Content of Water–Reducible Paints by Direct Injection into a Gas Chromatograph	40 CFR part 60 Appendix A, Method 24, par. 6.3

Table 5 (Continued)
ASTM Standard References

	Standard Number	Standard Title	Incorporated by Reference For
(49)	ASTM D4017–02	Standard Test Method for Water in Paints and Paint Materials by Karl Fischer Method	40 CFR part 60 Appendix A, Method 24, par. 6.4
(50)	ASTM D4052–96 (2002)	Standard Test Method for Density and Relative Density of Liquids by Digital Density Meter	40 CFR part 75 Appendix D
(51)	ASTM D4057–95 (2000)	Standard Practice for Manual Sampling of Petroleum and Petroleum Products	40 CFR part 75 Appendix D NR 439.08 (2) (a)
(52)	ASTM D4177–95 (2000)	Standard Practice for Automatic Sampling of Petroleum and Petroleum Products	40 CFR part 75 Appendix D NR 439.08 (2) (a)
(53)	ASTM D4239–04a	Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods	40 CFR part 60 Appendix A, Method 19 40 CFR part 75 Appendix A NR 439.08 (1) (c)
(54)	ASTM D4294–03	Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy–Dispersive X–Ray Fluorescence Spectrometry	40 CFR part 75 Appendices A and D NR 439.08 (2) (b)
(55)	ASTM D4809–00	Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method)	40 CFR part 75 Appendices D, E and F NR 460.10 (2) (f) 2.
(55b)	ASTM D4953–06	Standard Test Method for Vapor Pressure of Gasoline and Gasoline–Oxygenate Blends (Dry Method)	NR 419.045 (5) (d)
(55bg)	ASTM D5190–07	Standard Test Method for Vapor Pressure of Petroleum Products (Automatic Method)	NR 419.045 (5) (d)
(55br)	ASTM D5191–10b	Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method)	NR 419.045 (5) (d)
(55g)	ASTM D5865–04	Standard Test Method for Gross Calorific Value of Coal and Coke	NR 400.02 (79) NR 439.08 (1) (d)
(55i)	ASTM D5965–02	Standard Test Methods for Specific Gravity of Coating Powders	NR 465.47 (2) (c)
(55L)	ASTM D6053–00	Standard Test Method for Determination of Volatile Organic Compound (VOC) Content of Electrical Insulating Varnishes	40 CFR part 63, Subpart MMMM, Appendix A
(55m)	ASTM D6093–97 (2003)	Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer	NR 465.26 (2) (b) 1. NR 465.46 (2) (b) 1.
(55p)	ASTM D6323–98 (2003)	Standard Guide for Laboratory Subsampling of Media Related to Waste Management Activities	NR 462, Table 6
(55t)	ASTM D6522–00	Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas–Fired Reciprocating Engines, Combustion Turbines, Boilers and Process Heaters Using Portable Analyzers	NR 462, Table 5
(55v)	ASTM D6751–09	Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels	NR 406.02 (1)
(55x)	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)	NR 462, Table 5
(55c)	ASTM D5291–02	Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants	40 CFR part 63, Subpart MMMM, Appendix A
(56)	ASTM E84–03	Standard Test Method for Surface Burning Characteristics of Building Materials	ANSI A135.5–2004

Table 5 (Continued)
ASTM Standard References

	Standard Number	Standard Title	Incorporated by Reference For
(56d)	ASTM E711–87 (2004)	Standard Test Method for Gross Calorific Value of Refuse–Derived Fuel by the Bomb Calorimeter	NR 462, Table 6
(56h)	ASTM E776–87 (2004)	Standard Test Method for Forms of Chlorine in Refuse–Derived Fuel	NR 462, Table 6
(56m)	ASTM E145–94 (2001)	Standard Specification for Gravity–Convection and Forced–Ventilation Ovens	40 CFR part 63, Subpart PPPP, Appendix A
(56p)	ASTM E871–82 (1998)	Standard Method of Moisture Analysis of Particulate Wood Fuels	NR 462, Table 6
(56t)	ASTM E885–88 (2004)	Standard Test Methods for Analyses of Metals in Refuse–Derived Fuel by Atomic Absorption Spectroscopy	NR 462, Table 6
(57)	ASTM G23–96	Standard Practice for Operating Light–Exposure Apparatus (Carbon–Arc Type) With and Without Water for Exposure of Nonmetallic Materials	ANSI/AHA A135.5–1988

History: Renum. from NR 484.06 (4) and am., Register, February, 1995, No. 470, eff. 3–1–95; am. (1), (3), (7), (8), (15), (39), (51), (54), cr. (12m), (19), Register, April, 1995, No. 472, eff. 5–1–95; cr. (39m), Register, June, 1995, No. 474, eff. 7–1–95; am. (12), (17), (23), (24), (26), (29) to (31), (34), (40), (43) to (46), (53), (55) and (56), r. (11), Register, January, 1997, No. 493, eff. 2–1–97; am. (intro.), (28) and (35), Register, March, 1997, No. 495, eff. 4–1–97; am. (intro.), (1) to (10), (13) to (16), (18), (19), (21), (22), (24), (25) to (29), (31), (32), (33), (34), (36), (37), (39) to (42), (44), (47) to (52), (54), r. (12m), (35), renum. and am. (55) and (56) to be (56) and (57) and cr. (41m) and (55), Register, November, 1999, No. 527, eff. 12–1–99; am. (9), cr. (25m), Register, January, 2001, No. 541, eff. 2–1–01; CR 00–175: am. (intro.) and Table 5 Register March 2002 No. 555, eff. 4–1–02; CR 02–146: am. (1), (2), (4), (6) to (8), (12), (13), (21), (25), (25m), (27) to (34), (40), (41m), (44), (45), (49) to (51), (53), (54) and (55g) Register October 2003 No. 574, eff. 11–1–03; CR 03–037: am. Table 5 (22), and cr. (39e) and (55m) Register March 2004 No. 579, eff. 4–1–04; CR 01–081: am. (47m) Register September 2004 No. 585, eff. 10–1–04; CR 05–040: am. (intro.), (22), (39e) and (55m), cr. (55c), (55i), (55L) and (56m), Register February 2006 No. 602, eff. 3–1–06; CR 05–116: am. (3), (7), (8), (30), (33), (42) and (47m), cr. (26m), (47L), (55p), (55t), (55x), (56d), (56h), (56p) and (56t) Register November 2006 No. 611, eff. 12–1–06; CR 07–036: am. (47m) Register November 2008 No. 635, eff. 12–1–08; CR 08–102: am. (9), (12), (14), (21), (32), (36), (56) Register July 2009 No. 643, eff. 8–1–09; CR 09–020: cr. (55v) Register January 2010 No. 649, eff. 2–1–10; CR 11–005: am. (6), (39m) in Table 5, cr. (55b), (55bg), (55br) in Table 5 Register January 2012 No. 673, eff. 2–1–12; CR 20–088: am. (9), (25m) in Table 5 Register May 2022 No. 797, eff. 6–1–22.

NR 484.11 Other private organizations. The following materials from other private organizations listed in the first column of Tables 6A to 6K are incorporated by reference for the corresponding sections of chs. NR 400 to 439 and 445 to 499 listed in the third column of Tables 6A to 6K. Some of the materials are incorporated into other documents which are separately incorporated by reference in this chapter. Those documents are also listed in the third column of Tables 6A to 6K.

Note: Copies of these materials are available for inspection in the offices of the department of natural resources and legislative reference bureau, Madison, Wisconsin or may be purchased for personal use by writing to the organizations listed in the individual subsections.

(1) The following is a document from the American Architectural Manufacturers Association (AAMA).

Note: Copies may be purchased for personal use from:
American Architectural Manufacturers Association
1827 Walden Office Square Suite 104
Schaumburg IL 60173–4628

Table 6A
AAMA Document Reference

Document Number	Title	Incorporated by Reference For
AAMA 2604–02	Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings On Aluminum Extrusions and Panels	NR 422.02 (42) NR 465.42 (21)

(2) The following are documents from the American Conference of Governmental Industrial Hygienists (ACGIH).

Note: Copies may be purchased for personal use from:
American Conference of Governmental Industrial Hygienists
Technical Information Office
1330 Kemper Meadow Dr
Cincinnati OH 45240

Table 6B

ACGIH Document References

	Document Number	Title	Incorporated by Reference For
(a)	ISBN:0–936712–72–4	Threshold Limit Values and Biological Exposure Indexes for 1987–1988	NR 445.04 (1) (a) 1. NR 445.04 (1) (a) 2. NR 445.04 (1) (b) NR 445.04 (2) (a) NR 445.04 (2) (b) NR 445.04 (3) (c) 6. NR 445.05 (1) (a) 1. NR 445.05 (1) (a) 2. NR 445.05 (1) (b) NR 445.05 (2) (a) NR 445.05 (2) (b) NR 445.05 (3) (c) 7.
(b)	ISBN:0–936712–86–4	1990–1991 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indexes	NR 445.04 (4) (a) 1. NR 445.04 (4) (a) 2. NR 445.04 (4) (b) NR 445.04 (4r) (b) 4. NR 445.05 (4) (a) 1. NR 445.05 (4) (a) 2. NR 445.05 (4) (b) NR 445.05 (4r) (b) 4.
(c)	ISBN: 1–882417–36–4	2000 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices	NR 445.07 (1) (b) (intro.) NR 445.07 (5) (d) 2. NR 445.15 (3)
(d)		Industrial Ventilation: A Manual of Recommended Practice, 23th ed., 1998	NR 421.04 (3) (c) 1. NR 460 Appendix RRR NR 463.14, Table 2 NR 463.14 (3) (a)

(3) The following is a document from the American Gas Association (AGA) laboratories.

Note: Copies may be purchased for personal use from:
American Gas Association Laboratories
8501 East Pleasant Valley Road
Cleveland OH 44131

Table 6C

AGA Laboratories Document Reference

Document Number	Title	Incorporated by Reference For
Standard Z21.6 – 1973 with addenda: Z21.6a – 1975, Z21.6b – 1978	American National Standard for Domestic Gas–Fired Incinerators	NR 415.07 (1) (b) 2. NR 415.07 (2) (a) 4.

(4) The following are documents from the American National Standards Institute.

Note: Copies may be purchased for personal use from:
Composite Panel Association
19465 Deerfield Avenue, Suite 306
Leesburg, VA 20176
Telephone: (703) 724–1128
Website: http://www.pbmdf.com
or from:
HIS Global Engineering Documents
15 Inverness Way East
Englewood, CO 80112
Telephone: (800) 854–7179
E–mail: globalcustomerservice@ihs.com
Website: http://global.ihs.com

Table 6D

AHA Document References

	Document Number	Title	Incorporated by Reference For
(a)	ANSI A135.4–2004	Basic Hardboard	ANSI A135.5–2004 NR 422.02 (12s)
(b)	ANSI A135.5–2004	Prefinished Hardboard Paneling	NR 422.02 (13)

(5) The following is a document from the American Petroleum Institute (API).

Note: Copies may be purchased for personal use from:
American Petroleum Institute
1220 L Street NW
Washington DC 20005

Table 6E

API Document Reference

Document Number	Title	Incorporated by Reference For
Publication 2517	Evaporative Loss from External Floating Roof Tanks, 3rd edition, February 1989	NR 419.045 (5) (d) NR 420.02 (33) NR 420.03 (3) (c)

(6) The following are documents from the American Society of Mechanical Engineers (ASME):

Note: Copies may be purchased for personal use from:
The American Society of Mechanical Engineers
22 Law Drive
Fairfield NJ 07007–2900
E–mail: infocentral@asme.org
Phone: (973) 882–1170
Fax: (973) 882–5155

Table 6F

ASME Document Reference

Document Number	Title	Incorporated by Reference For
(a) PTC 4.2–1969 (1997)	Test Code for Coal Pulverizers	NR 439.098 (1) (c)
(b) PTC 19.10–1981	Flue and Exhaust Gas Analysis	NR 462, Table 5 NR 465.28 (7) (a) 3. NR 466.24 (3) (e) 1. c.

(7) The following is a document from The Business and Institutional Furniture Manufacturer's Association (BIFMA).

Note: Copies may be purchased for personal use from:
BIFMA International
2680 Horizon Drive SE, Suite A–1
Grand Rapids MI 49546–7500
E–mail: email@bifma.org
Phone: (616) 285–3963
Fax: (616) 285–3765

Table 6G

BIFMA Document Reference

Document Number	Title	Incorporated by Reference For
BIFMA X5.7–1991	Voluntary Upholstered Furniture Flammability Standard for Non–residential, Non–live–in Occupancies	NR 465.04 (1) (b) 1.

(8) The following is a document from the International Organization for Standardization (ISO):

Note: Copies may be purchased for personal use from:
American National Standards Institute
11 West 42nd Street
13th floor
New York NY 10036

Table 6H

ISO Document Reference

Document Number	Title	Incorporated by Reference For
ISO 9931 (1991)	Coal – Sampling of Pulverized Coal Conveyed by Gases in Direct Fired Coal Systems	NR 439.098 (1) (c)

(9) The following is a document from the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI):

Note: Copies may be obtained for personal use from:
National Council of the Paper Industry for Air and Stream Improvement, Inc.
PO Box 13318
Research Triangle Park NC 27709–3318
http://www.ncasi.org
(919) 558–1987

Table 6I

NCASI Document Reference

Document Number	Title	Incorporated by Reference For
NCASI Method DI/MEOH–94.02	Methanol in Process Liquids by GC/FID, August 1998, Methods Manual	40 CFR 63.457(c)(3)(ii)

(10) The following are documents from the Upholstered Furniture Action Council (UFAC).

Note: Copies may be purchased for personal use from:
Upholstered Furniture Action Council
Box 2436
High Point, NC 27261
Phone: (336) 885–5065
Fax: (336) 885–5072

Table 6J

UFAC Document Reference

	Document Number	Title	Incorporated by Reference For
(a)	DMTM––1990	Decking Materials Test Method––1990	NR 465.04 (1) (b) 1.
(b)	WCTM––1990	Welt Cord Test Method––1990	NR 465.04 (1) (b) 1.
(c)	IFTM––1990	Interior Fabrics Test Method––1990	NR 465.04 (1) (b) 1.
(d)	F/PCTM––1990, PT A	Filling/Padding Component Test Method––1990 Part A – For Slab or Garnetted Materials	NR 465.04 (1) (b) 1.
(e)	F/PCTM––1990, PT B	Filling/Padding Component Test Method––1990 Part B – For Fibrous or Particulate Materials	NR 465.04 (1) (b) 1.
(f)	PTM––1990	Barrier Test Method––1990	NR 465.04 (1) (b) 1.
(g)	FCTM––1990	Fabric Classification Test Method––1990	NR 465.04 (1) (b) 1.
(h)	DTTM––1993	Standard Test Methods for Decorative Trims, Edging, and Brush Fringes––1993	NR 465.04 (1) (b) 1.

(11) The following documents are from the World Resources Institute and World Business Council for Sustainable Development.

Note: Copies of the document listed in par. (a) may be downloaded for personal use from the following internet address: http://www.ghgprotocol.org/
Printed copies may be purchased from:
World Resources Institute Publications
PO Box 4852
Hampden Station
Baltimore MD 21211
Phone: 1–800–822–0504
Fax: (410) 516–6998

Note: Copies of the software documents listed in par. (b) may be downloaded for personal use from the following internet address: http://www.ghgprotocol.org/calculation–tools
To obtain the software by mail contact:
WRI
10 G Street NE
Washington DC 20002
Phone: (202) 729–7600
Fax: (202) 729–7637

Table 6K

WRI/WBCSD Document Reference

Document Number	Title	Incorporated by Reference For
(a) ISBN 2–940240–18–3	The Greenhouse Gas Protocol – a corporate accounting and reporting standard, first edition, September 2001	NR 437.04 (2) (a) 20.
(b) N/A	GHG Calculation Tools	NR 437.04 (2) (a) 21.

(12) The following document is a joint publication of the American Public Health Association, the American Water Works Association, and the Water Environment Federation.

Note: Copies may be purchased for personal use from:
APHA
Publications Sales
PO Box 933019
Atlanta, GA 31193–3019
Telephone: (888) 361–2742
Website: http://www.apha.org/publications/pubscontact/

Table 6L
APHA Document Reference

Document Number	Title	Incorporated by Reference For
N/A	Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998	NR 419.045 (5) (f) 5.

History: Cr. Register, February, 1995, No. 470, eff. 3–1–95; am. (1) (b), Register, April, 1995, No. 472, eff. 5–1–95; r. (1) (c), am. (1) (a), Register, December, 1995, No. 480, eff. 1–1–96; am. (5), Register, January, 1997, No. 493, eff. 2–1–97; am. (5), renum. (1) to (5) to be (2), (3), (4), (5) and (1), cr. (6) and (7), Register, November, 1999, No. 527, eff. 12–1–99; CR 00–160: renum. (7) and Table 6G to be (8) and Table 6H, cr. (7) and (10), Register August 2001 No. 548, eff. 9–1–01; CR 00–175: am. (intro.), cr. (9) and Table 6I Register March 2002 No. 555, eff. 4–1–02; CR 02–012: am. (intro.), cr. (11) and Table 6K Register October 2002 No. 562, eff. 11–1–02; CR 03–037: am. (6) and Table 6F, cr. (6) (b) Register March 2004 No. 579, eff. 4–1–04; CR 02–097: am. (2) (b), cr. (2) (c), Register June 2004 No. 582, eff. 7–1–04; CR 05–040: am. (intro.) and (1) Table 6A Register February 2006 No. 602, eff. 3–1–06; CR 05–116: am. (6) (b) Register November 2006 No. 611, eff. 12–1–06; CR 07–045: am. (6) (b) Register April 2008 No. 628, eff. 5–1–08; CR 04–023: am. (2) (d) Register December 2008 No. 636, eff. 1–1–09; CR 08–102: am. (4) Register July 2009 No. 643, eff. 8–1–09; CR 11–005: am. (5), cr. (12) Register January 2012 No. 673, eff. 2–1–12.

Section 110(l) Non-Interference Demonstrations

Section 110(l) of the Clean Air Act (CAA) prohibits the U.S. Environmental Protection Agency (EPA) from approving a state implementation plan (SIP) revision that would interfere with any applicable requirement concerning attainment, reasonable further progress, or any other applicable CAA requirement. The following information demonstrates that the rule changes to chs. NR 400, 428, and 484, Wis. Adm. Code, that the WI DNR is requesting for SIP approval will not interfere with any requirement identified under CAA section 110(l).

The revised rule provisions in this SIP submittal are organized by category in the table below.

Revision Category	**Wisconsin Administrative Code Natural Resources (NR) Citations**
Definitions	400.03(4)(mf) 428.02(7i) 428.02(7p) 428.02(7u) 428.02(7w)
Clarification of requirements during secondary fuel usage	428.04(2)(i) 428.04(4)(c) 428.05(2)(b) 428.05(2)(f) 428.05(3)(f) 428.05(5)(c) 428.22(1) 428.22(3) 428.24(1)(c)
Site-specific emission limitation alternative	428.055
Revision of compliance monitoring plan submittal deadline	428.07(1)(a)2.
Clarification of monitoring requirements for emissions units	428.08(2)(e)(title) 428.08(2)(f)(title) 428.08(2)(g) 428.08(3) 484.04 Table 2 Row (15m)
Clarification of emission limitation exception	428.21(3)(d)

Definitions

The revised rule incorporates a definition for the acronym for state implementation, SIP, under s. NR 400.03(4)(mf). The revised rule also incorporates definitions for “primary fuel”, “secondary fuel”, “simple cycle stationary combustion turbine”, and “supply interruption” or “curtailment” under s. NR 428.02(7i), (7p), (7u) and (7w). Incorporation of these definitions is administrative in nature and ensures terms included in the new rule language are defined. These changes will not interfere with any applicable requirement concerning attainment, reasonable further progress, or any other CAA requirement.

Clarification of Requirements During Secondary Fuel Usage

Revised ss. NR 428.04, 428.04, 428.22 and 428.24, along with the added definitions of primary and secondary fuel in s. NR 428.02, clarify the applicability of emission limits and monitoring requirements when a facility uses more than one type of fuel. Specifically, the revisions clarify that the emission limits and monitoring requirements in these sections apply to all fuels used by an affected unit, both primary and secondary, and define limited circumstances when secondary fuel usage is not subject to the emission limits and monitoring requirements. The earlier version of the rule was less clear about the applicability of limits and requirements to affected units when using a secondary fuel.

The limited circumstances when units firing secondary fuel are exempt from emission limits and monitoring requirements are the following:

- When the emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the corresponding applicability thresholds.
- When the emissions unit burns the secondary fuel only during periods of curtailment or supply interruption of other fuel(s) not to exceed 500 hours in a 12 consecutive month time period.
- During periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.
- When the secondary fuel constitutes less than 1% of the emission unit's fuel consumption within a 12 consecutive month time period.

Because the revisions merely clarify that all fuels used by a unit are subject to emission limitations and monitoring requirements except in limited circumstances, they result in no or negligible emissions increases of criteria air pollutants. These changes will not interfere with any applicable requirement concerning attainment, reasonable further progress, or any other CAA requirement.

Site-Specific Emission Limit Alternative

Section NR 428.055 provides a pathway for facilities to request, and WI DNR to set, a site-specific emission limit if the facility demonstrates that compliance with requirements under ss. NR 428.04 or 428.05 are technologically or economically infeasible. In addition to other criteria that must be met prior to a site-specific emission limitation becoming effective, the provision prevents any site-specific emission limitation from delaying attainment or preventing maintenance of a National Ambient Air Quality Standard. Under the new provision, a site-specific emission limitation becomes effective only after it has been approved into the SIP by EPA. To meet completeness requirements under 40 CFR Part 51, Appendix V, any proposed site-specific emission limitation alternative submitted by the WI DNR for SIP approval would include a section 110(l) non-interference demonstration.

Revision of Compliance Monitoring Plan Submittal Deadline

The deadline for compliance monitoring plan submittals is revised in s. NR 428.07(1)(a)2. from "at least 180 days prior to initial operation" to "at least 180 days prior to initial operation, or an alternative date less than 180 days approved by the department." The previous rule language required plans to be submitted 180 days before initial operation. This meant a source would have been required to wait for the 180-day period to end prior to operating, even if the source was permitted and physically capable of operation prior to that date. The revised rule language allows the source to request an alternative date to avoid the waiting period if necessary. These changes do not result in any increases in actual or potential emissions of criteria pollutants and will not interfere with any applicable requirement concerning attainment, reasonable further progress, or any other CAA requirement.

Clarification of Monitoring Requirements for Specific Categories of Emissions Units

Sections NR 428.08(2)(g) and (3) clarify monitoring requirements and exceptions for emissions units such as kilns, furnaces, asphalt plants, process heating units, engines.

Prior to revision, s. NR 428.08(2) did not explicitly establish monitoring requirements for these types of emissions units. The revised rule language under s. NR 428.08(2)(g) provides subject facilities two compliance options: operate a continuous emissions monitoring system or meet operational and performance testing requirements. The operational and performance testing requirements in the revised rule language are consistent with the SIP-approved compliance demonstration requirements for emission limitations under s. NR 428.23(1)(b). Section NR 428.08(2)(g)4.a. requires that emissions performance tests be conducted according to Method 7, 7A, 7B, 7C, 7D, or 7E under 40 CFR part 60, Appendix A. Section NR 484.04 Table 2 Row (15m), which incorporates these federal test methods by reference, is revised to cross-reference to s. NR 428.08(2)(g)4.a.

Section NR 428.08(3) contains exceptions from s. NR 428.08(2)(g) monitoring requirements and is consistent with SIP-approved compliance emission testing exception language under s. NR 439.075(4).

These changes will not interfere with any applicable requirement concerning attainment, reasonable further progress, or any other CAA requirement.

Clarification of Exception

Section NR 428.21(3) contains exceptions from s. NR 428.22 emission limitations for emissions units that meet several criteria. The revised rule incorporates an additional criterion under s. NR 428.21(3)(d) that to be eligible for the exception, the emissions unit must have been constructed prior to August 1, 2007. This additional criterion addresses a previous oversight and ensures the exception will be applied as originally intended. This change will not result in increased

emissions and so will not interfere with any applicable requirement concerning attainment, reasonable further progress, or any other CAA requirement.

Form 1100-001P (Rev. 01/23)

Wisconsin Department of Natural Resources
Natural Resources Board Agenda Item

Item No. 4.A.

SUBJECT:
Request adoption of Board Order AM-05-21, proposed rules affecting chapter NR 428 related to revisions to nitrogen compound emissions regulations

FOR: September 2023 Board meeting

PRESENTER'S NAME AND TITLE: Kristin Hart, Air Management Field Operations Director

SUMMARY:
Nitrogen oxides (NOx) react with volatile organic compounds in the presence of sunlight to form ground-level ozone, a pollutant regulated under the federal Clean Air Act (CAA) due to its adverse impacts on human health and the environment. Emissions sources of NOx located in areas not attaining the National Ambient Air Quality Standards for ozone are subject to more stringent controls under the CAA. Chapter NR 428, Wis. Adm. Code, regulates the emissions of NOx from certain stationary sources in areas of the state with a history of high ozone.

Since the rule chapter was last revised in 2007, the department has identified several implementation issues associated with ch. NR 428, Wis. Adm. Code, and is proposing revisions to ensure clear and consistent implementation of this rule. None of the proposed changes will impact an area's ability to meet or maintain the National Ambient Air Quality Standards. The proposed changes include:

- Ensuring that emission limits are achievable for combined cycle combustion turbines and including a site-specific emission limit alternative.
- Clarifying emission limits and monitoring requirements that apply when a facility uses more than one type of fuel.
- Clarifying monitoring requirements for kilns, furnaces, asphalt plants, process heating units, engines, and other types of units under s. NR 428.08(2), Wis. Adm. Code.
- Providing stationary sources the option to request an alternative time period to the default 180-day waiting period between the compliance monitoring plan submittal deadline and initial operation of a facility.
- Clarifying that the unit exception in s. NR 428.21(3), Wis. Adm. Code, applies only to units constructed before August 1, 2007, as originally intended.
- Updating cross references to federal methods for determining NOx emissions from stationary sources.

The economic impact of the rule is expected to be moderate. The rule is not expected to impact small businesses.

The Board last acted on this rule at its December 2021 meeting, approving the scope statement and conditionally authorizing hearings. The department has completed the external review process for Board Order AM-05-21, which includes holding a public hearing and review by the Legislative Council Rules Clearinghouse. Comments received have been considered in the draft final rule. If the final rule language of AM-05-21 is approved, the rule will be submitted to the Governor and, if the Governor approves, to the legislature for review and approval. The 30-month time frame for submission of a final rule to the legislature for approval expires on January 26, 2024.

RECOMMENDATION: That the Board adopt Board Order AM-05-21.

LIST OF ATTACHED MATERIALS (check all that are applicable):

- ☒ Background Memo
- ☒ Fiscal estimate and economic impact analysis (EIA) form
- ☒ Response summary
- ☐ Attachments to background memo
- ☒ Board order/rule
- ☐ (insert document name)

Approved by	Signature	Date
Gail E. Good, Air Management Program Director	DocuSigned by: Gail E. Good	8/10/2023 | 1:43 PM CDT
James Zellmer, Environmental Management Division Administrator	DocuSigned by: James Zellmer	8/14/2023 | 9:43 AM CDT
Steven Little, Deputy Secretary For Secretary Adam N. Payne	DocuSigned by: Steven Little	8/14/2023 | 10:31 AM CDT

cc: Board Liaison - AD/8 DS A.B Program attorney – LS/8 Department rule officer – LS/8

DNR ADMINISTRATIVE RULE PROMULGATION PROCEDURE FOR PERMANENT RULES 2022

PHASE I – Scope Statement Approval

1. Scope statement completed and approved by the Secretary.

2. Scope statement submitted to DOA.

3. Scope statement submitted to and approved by the Governor.

4. Approved scope statement submitted to LRB, JCRAR, and NRB.

5. LRB publishes the scope statement in the Register. **Scope statement 30-month expiration starts on day of publication.**

6. Yellow Sheet submitted to reserve time on the NRB agenda for approval of scope statement, conditional approval of the notice of public hearing and the notice of submittal of the proposed rule to the Legislative Council (notices), and approval of preliminary public hearing.

7. Department may be directed to hold preliminary a public hearing on scope statement. Notify NRB Liaison by email if preliminary hearing is requested. If JCRAR does not request preliminary public hearing, move onto step 12.

8. Green Sheet package submitted to request NRB authorization to hold preliminary public hearing.

9. NRB meeting to authorize preliminary public hearing.

10. Notice of preliminary public hearing published by LRB in the Register and posted on DNR external website and hearings calendar.

11. Preliminary public hearing held. Comment period closes.

12. Green Sheet package submitted to request NRB's approval of scope statement and notices.

13. NRB meeting to approve scope statement and notices.

PHASE II – Rule Preparation

14. Proposed rule language prepared in board order format.

PHASE III – Economic Impact Analysis

15. Fiscal estimate and economic impact analysis (FE/EIA) prepared.

16. Solicitation Notice prepared for comments on EIA. Solicitation Memo to NRB prepared.

17. Solicitation Memo submitted to NRB for information.

18. Solicitation Notice posted on DNR website and published in the Register. Notice submitted to affected parties. Comment period closes.

PHASE IV – External Reviews

19. Public hearing documents prepared and submitted to NRB for 15-day passive review.

20. Rule documents submitted to and reviewed by the Legislative Council.

21. Notice of public hearing published in the Register and posted on DNR external website and hearings calendar.

22. Public hearing on proposed rule held at least 10 days after publication in the Register. Public comment period closes.

23. Rule language revised based on external review.

24. Request for incorporation by reference submitted to AG if rule requires incorporation by reference.

PHASE V – Rule Approval

25. Yellow Sheet submitted to hold a place on NRB's agenda for adoption of proposed rule.

26. Green Sheet package submitted to request NRB adoption of proposed rule.

27. NRB meeting for adoption of final rule.

28. Final rule submitted to and approved by the Governor.

PHASE VI – Legislative Review

29. Report to Legislature and Notices prepared and submitted to Assembly and Senate Chief Clerks. Rule must be submitted for legislative review before the scope statement 30-month expiration date.

30. Rule referred to and reviewed by Standing Committees.

31. Rule referred to and reviewed by JCRAR.

PHASE VII – Promulgation

32. Final Rule signed by the Secretary.

33. Final Rule filed with LRB.

34. Rule proof received by LRB and reviewed by program.

35. Final rule published in the Register. Rule becomes effective the first day of the month following publication.

State of Wisconsin

CORRESPONDENCE/MEMORANDUM

DATE: August 11, 2023

TO: All Members of the Natural Resources Board

FROM: Adam N. Payne, Secretary

SUBJECT: Background memo on Board Order AM-05-21, relating to revisions to nitrogen compound emissions regulations in ch. NR 428

1. **Subject of Proposed Rule:**
Revisions to nitrogen compound emissions regulations in ch. NR 428, Wis. Adm. Code.

2. **Background:**
Nitrogen oxides (NO_X) react with volatile organic compounds in the presence of sunlight to form ground-level ozone. Concentrations of ozone above the National Ambient Air Quality Standards (NAAQS) are known to adversely impact human health and the environment. The U.S. Environmental Protection Agency has designated several areas along the Lake Michigan shoreline in eastern Wisconsin as "nonattainment areas" due to ozone concentrations violating the NAAQS. Emissions sources located in nonattainment areas are subject to more stringent controls under the federal Clean Air Act. Chapter NR 428, Wis. Adm. Code, regulates the emissions of NO_X from certain stationary sources located in current ozone nonattainment areas and areas with a history of ozone nonattainment.

   Since the last time ch. NR 428, Wis. Adm. Code, was revised in 2007, the department has identified several implementation issues associated with certain parts of the chapter. The department is proposing revisions to the chapter to ensure clear and consistent implementation of this rule. In addition to the statutorily required comment periods on the proposed rule and its economic impact, the department held an information session on May 31, 2022, at the beginning of the rule drafting phase to explain the purpose of the proposed rulemaking. Department staff also presented the proposed ch. NR 428 rule changes to the Small Business Environmental Council on May 19, 2023.

3. **Why is the rule being proposed?**
Since promulgation of revisions to ch. NR 428 in 2001 and 2007, the department has identified specific implementation issues that, when possible, have been addressed on a case-by-case basis. The proposed changes address unclear or problematic sections of ch. NR 428 and will ultimately reduce confusion for the public, emissions sources, and department staff and expedite permit reviews.

4. **Summary of the rule:**
The proposed changes include:
   - Ensuring that emission limits are achievable for combined cycle combustion turbines and including a site-specific emission limit alternative.
   - Clarifying emission limits and monitoring requirements that apply when a facility uses more than one type of fuel.
   - Clarifying monitoring requirements for kilns, furnaces, asphalt plants, process heating units, engines, and other types of units under s. NR 428.08(2), Wis. Adm. Code.
   - Providing stationary sources the option to request an alternative time period to the default 180-day waiting period between the compliance monitoring plan submittal deadline and initial operation of a facility.

- Clarifying that the unit exception in s. NR 428.21(3), Wis. Adm. Code, applies only to units constructed before August 1, 2007, as originally intended.
- Updating cross references to federal methods for determining NOx emissions from stationary sources.

5. **How does this proposal affect existing policy?**
   The proposal will not impact existing policy, nor does it propose any new policies. This rule is consistent with how the department has addressed case-specific ch. NR 428 implementation issues.

6. **Has Board dealt with these issues before?**
   Yes. The Board approved the scope statement and conditionally authorized hearings for AM-05-21 at its December 2021 meeting.

7. **Who will be impacted by the proposed rule? How?**
   Affected entities include major stationary sources of NOx emissions (mainly fuel combustion sources) located in Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha counties. Generally, the proposed rule changes address known implementation issues and unclear language currently in ch. NR 428. The anticipated impact of the rule is reduced confusion for sources and department staff regarding applicable NOx emissions regulations.

   The only proposed change which may economically impact businesses is the proposed clarification of monitoring requirements for kilns, furnaces, asphalt plants, process heating units, engines, and other units under s. NR 428.08(2)(g), Wis. Adm. Code. Due to previous oversight, there are currently no monitoring requirements explicitly defined for these types of units in ch. NR 428, so costs may be incurred to comply once the proposed language becomes effective. These clarified monitoring requirements may reduce emissions of NOx to the environment by ensuring the department is able to enforce NOx emission limits by way of requiring emissions monitoring at all applicable units.

8. **Soliciting public input on economic impact:**
   Comments on the economic impact of the rule were solicited from February 20, 2023 to March 13, 2023. No comments were received.

9. **Small Business Analysis:**
   Chapter NR 428, Wis. Adm. Code, primarily applies to facilities that are large sources of NOx emissions as defined by the CAA, and those facilities in Wisconsin have tended to not meet the definition of small business. The proposed revisions are intended to clarify existing requirements and to ensure clear and consistent implementation of ch. NR 428, Wis. Adm. Code. The proposed changes to ch. NR 428, Wis. Adm. Code, will not result in any existing facility, small business or otherwise, becoming newly subject to NOx emissions regulations upon promulgation of this rule.

Drafter: Olivia Salmon

Comments and DNR Responses
Natural Resources Board Order AM-05-21

August 9, 2023

This document presents a summary of public comments received on proposed rules affecting chapters NR 400, 428, and 484, Wis. Adm. Code, related to revisions to nitrogen compound emissions regulations.

OVERVIEW

Rule Objective

Nitrogen oxides (NOx) react with volatile organic compounds in the presence of sunlight to form ground-level ozone, a pollutant regulated under the federal Clean Air Act (CAA) due to its adverse impacts on human health and the environment. Emissions sources of NOx located in areas with high levels of ozone are subject to more stringent controls under the CAA. Chapter NR 428, Wis. Adm. Code, regulates the emissions of NOx from certain stationary sources located in certain areas with a history of high ozone, including the counties of Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha. Since the rule chapter was last revised in 2007, the department has identified several implementation issues associated with ch. NR 428, Wis. Adm. Code, and is proposing revisions to ensure clear and consistent implementation of this rule.

Public Outreach/Input Opportunities

Informational Meeting – An informational meeting was held on May 31, 2022, to describe the ch. NR 428, Wis. Adm. Code, revisions the department was considering and gather input from stakeholders. The informational session was held in Milwaukee, WI, and over Zoom and was attended by 23 members of the public.

Economic Impact Analysis - A public comment period on the draft economic impact analysis (EIA) was held from February 20, 2023, to March 13, 2023. The department notified the following entities of the opportunity to comment at the beginning of the solicitation period: facilities that may potentially be affected by the proposed revisions, the Small Business Environmental Council, the American Council of Engineering Companies of Wisconsin, the League of Wisconsin Municipalities, the Wisconsin Counties Associations, Wisconsin Manufacturers and Commerce, the Wisconsin Paper Council, and Clean Wisconsin. The Air Management Advisory Group, which includes stakeholders representing academia, utilities, and large and small businesses, was also notified of the opportunity to comment. The department did not receive any comments on the EIA.

Small Business Environmental Council Meeting – The department attended a meeting of the Small Business Environmental Council on May 19, 2023, to provide information on the proposed rule changes under Board Order AM-05-21. The Small Business Environmental Council did not provide any comments.

Public Hearing and Comment - A public comment period on the draft rule occurred from May 2, 2023, to June 7, 2023, and a virtual public hearing was held on May 31, 2023. The department notified the group of stakeholders identified under the EIA section of the opportunity to comment on the proposed rule. Three members of the public attended the hearing on the draft rule; none of the attendees provided verbal comments. One of the attendees registered in support of the proposed rule. The two other attendees did not register a position, either in support of or against the proposed rule. The department received written comments from WEC Energy Group in support of the rule and from Sierra Club in opposition to the rule.

The U.S. Environmental Protection Agency (EPA) provided the department suggested changes to the draft rule language, which the department is documenting here.

LEGISLATIVE COUNCIL RULES CLEARINGHOUSE (23-017)

The Legislative Council Rules Clearinghouse submitted comments on form, style and placement; adequacy of references; and clarity, grammar and punctuation. Changes to the proposed rule were made to address all recommendations by the Legislative Council Rules Clearinghouse, except for those discussed below.

1. *Comment 2.c.(1) recommends that the sub. (2)* Alternative Criteria *language under s. NR 428.055 be added as a subunit of sub. (1)* Alternative Authority *if the items in sub. (2) are requirements under sub. (1). The comment recommends that the same should be done for sub. (3)* Procedures for Issuance of Alternatives*, sub. (4)* Revocation and Modification of Alternatives*, and sub. (5)* Effective Date of Alternatives *if they are requirements of sub. (1).*

   DNR Response – The department did not make the recommended changes to subs. (1) to (5) of s. NR 428.055 because the items are not requirements under sub. (1). Each serve a distinct purpose and do not represent or contain requirements for the other subsections.

2. *Comment 2.c.(2) questions why technological and economic infeasibility language is addressed in both sub. (1)* Alternative Authority *and sub. (2)* Alternative Criteria *language under s. NR 428.055.*

   DNR Response – The department is retaining the technological and economic infeasibility language under s. NR 428.055 (1) and (2) because the two subsections serve separate purposes. Subsection (1) establishes the department's authority to issue site-specific emission limit alternatives in instances where requirements under s. NR 428.04 or 428.05 are technologically or economically infeasible. Subsection (2) (c) specifies the criteria that a source must meet to demonstrate that applicable requirements from which variance is sought are technologically or economically infeasible.

3. *Comment 2.c.(5) questions why EPA approval is needed before an alternative emission limit can be revoked and recommends removing revocation language under s. NR 428.055 (5) if EPA approval is not needed.*

   DNR Response – The department is retaining the revocation language under s. NR 428.055 (5) because once alternative emissions limits are approved into the State Implementation Plan (SIP) by EPA, they are made federally enforceable. Any revision to the SIP, including removal of the alternative emissions limits, shall also be approved by EPA in accordance with section 110(l) of the Clean Air Act.

4. *Comment 2.d.(1)(d) recommends "ranges" be inserted after "load" or that "load" be changed to "loads" in s. NR 428.08 (2) (g) 4. c.*

   DNR Response - The department is not modifying s. NR 428.08 (2) (g) 4. c. "capacity load" language as recommended but did add language to clarify that performance testing is required for the worst-case load range as determined by the testing done under s. NR 428.08 (2) (g) 4. b.

PUBLIC COMMENTS ON DRAFT RULE AND DNR RESPONSE
The following is a summary of comments received and the department's responses.

Comments from WEC Energy Group:

1. *WEC Energy Group supports the department's proposed rule changes to ch. NR 428. WEC Energy Group noted combustion turbine unit dispatch may be impacted by the incorporation of renewable energy generation into its portfolio, as well as by federal greenhouse gas regulations. Together these changes may result in shorter run times between startups and more frequent shutdowns for combustion turbines than under current operation, potentially making it difficult to meet even the revised emission limit proposed under s. NR 428.04 (2) (g) 1. d. WEC Energy Group provided recommendations for setting NOx emissions limits for such future scenarios.*

   DNR Response – The department acknowledges the comment from WEC. The language proposed under s. NR 428.055 provides procedures for obtaining an alternative emission limitation when a demonstration is made that an emission limit is no longer technologically or economically feasible. No change has been made to the proposed rule language based on this comment.

Comments from Sierra Club:

1. *Sierra Club is opposed to the department's proposed revision of the NOx emission limit under s. NR 428.04 (2) (g) 1. d. for 25 MWe or greater combined cycle turbines from 3 ppm to 9 ppm at 15% oxygen.*

a. *Sierra Club commented that the department had not provided an adequate explanation for why it is proposing to modify the emission limit in question since the current limit is achievable during steady state operations for new units, as demonstrated by Best Available Control Technology (BACT) limits set in other states within the last year.*

   DNR Response – Section NR 428.04 applies to emission units that were constructed or underwent a major modification *after February 1, 2001*. Furthermore, the s. NR 428.04 emission limits apply at all times including during periods of startup and shutdown, thus it is not appropriate to compare s. NR 428.04 emission limits to steady state BACT limits. As noted on page 2 of the board order, "…the existing limit is not achievable in practice at all times of operation (e.g., during periods of startup or shutdown)." The board order goes on to say that "[b]ecause the proposed emission limit is reflective of current operations, including periods of startup and shutdown, the proposed rule change is not expected to result in an increase in actual emissions." As utilities transition to renewable energy, it has become necessary for some emissions units to startup/shutdown more frequently to ensure base load energy is available. For more explanation on this topic please see the comment submitted by WEC Energy Group above. No change has been made to the proposed rule language based on this comment.

b. *Sierra Club recommends implementing an emission limit that applies during steady state operations and a separate, secondary limit that applies during periods of startup and shutdown, consistent with BACT determinations.*

   DNR Response – No change has been made to the proposed rule language based on this comment. As noted in the department's previous response, it is not appropriate to compare s. NR 428.04 emissions limits with BACT limits. Additionally, EPA does not recommend establishing alternative emissions limits for sources that are capable of meeting their existing emission limitations at all times (88 FR 38448). The proposed rule language under s. NR 428.055 establishes a process for setting alternative site-specific emission limitations in such instances when it is technologically or economically infeasible for a source to meet the existing emission limits, such as during periods of startup and shutdown. The proposed rule language is consistent with EPA recommendations that alternative

emission limits be limited to specific and narrowly defined source categories using specific control strategies (80 FR 33839).

c. *Sierra Club states the department's reasoning for aligning the NOx emission limit under s. NR 428.04 with the limit for the same type of emission units under s. NR 428.22 is flawed because s. NR 428.04 is for new sources and s. NR 428.22 is for existing sources.*

DNR Response - The emission limits under s. NR 428.04 apply to emissions units that are constructed or undergo a major modification *after February 1, 2001*. The emissions limits under s. NR 428.22 became effective for *any* emissions unit meeting the applicability criteria *on or after May 1, 2009*. New sources, whether constructed in 2001 or present day, are unable to meet the emission limitation in s. NR 428.04 (2) (g) 1. d. when emissions from startup and shutdown are included. The emission limitation that was developed for existing sources in 2009 considered startup and shutdown emissions and was approved as RACT by EPA. No change has been made to the proposed rule language based on this comment.

2. *Sierra Club is opposed to the department's proposed rule language that would eliminate emission limit and monitoring requirements during certain periods when a secondary fuel is used. Sierra Club commented that the department had not offered justification for why the proposed changes are necessary. Sierra Club also commented that the department's characterization of the proposed change as a "clarification" is not accurate.*

DNR Response – In response to this comment, the department has added language to page two of the board order describing its reasoning for proposing to incorporate the secondary fuel language. It has been the department's practice that emission limits and monitoring requirements do not apply when a source is utilizing secondary fuels under certain circumstances. The proposed exception does not apply to all secondary fuel usage, but rather, only in specified cases such as where the given secondary fuel is used during limited periods of supply interruption or if the secondary fuel use comprises less than one percent of total fuel heat input.

3. *Sierra Club is opposed to the proposed rule language under s. NR 428.055 which would set site-specific NOx emission limits for facilities for which it is technologically or economically infeasible to meet s. NR 428.04 or 428.05 emission limits. Sierra Club commented that the proposed language "...provides no criteria on which the department must rely in deciding whether to grant an exception" and "gives unbounded discretion in authoring case-specific revisions of NOx RACT and new source standards to the department." (i.e., a "director's discretion provision). Sierra Club commented that the inclusion of an alternative-site specific emission limit is at odds with EPA's 2010 approval of the source-category-wide NOx RACT limits under s. NR 428.22.*

DNR Response –The proposed rule language is not a director's discretion provision. Section NR 428.05 (2) sets criteria requirements that a source must meet to request an alternate emission limit, which requires that the "alternative will not delay attainment or prevent maintenance of any ambient air quality standard." Technological and economic feasibility are determined on a case-by-case basis. The proposed rule also requires any proposed alternative and its reasoning to be public noticed and be given an opportunity for public comment under s. NR 428.055 (3) (b). Additionally, under s. NR 428.055 (5), an alternative emission limit would become effective only after approval by EPA into the SIP. The proposed language is not at odds with EPA's definition of RACT. Specifically, "Although EPA has historically recommended source-category-wide presumptive RACT limits, and plans to continue that practice, decisions on RACT may be made on a case-by-case basis, considering the technological and economic circumstances of the individual source." (*General Definition of RACT*, 57 FR 55624). No change has been made to the proposed rule language based on this comment.

4. *Sierra Club commented that DNR did not support the proposed changes to ch. NR 428 with demonstrations that the changes will not interfere with any applicable requirement concerning attainment and reasonable further progress and will not lead to backsliding (42 U.S.C. § 7410(l); 40 CFR Part 51 Appendix V). Sierra Club also commented that ch. NR 428 NOx emissions regulations are applicable to sources located in environmental justice communities (Milwaukee, Racine, Kenosha, Waukesha).*

   DNR Response – It is the department's regular practice to provide non-interference demonstrations required under CAA Section 110(l) for each of the proposed rule changes when the department submits the final rule to EPA for approval into the Wisconsin SIP. As noted throughout the board order, the proposed rule changes codify the department's current practices in cases where current administrative rule language is unclear. The proposed changes reflect current facility operations and are not expected to result in an increase in emissions in the affected areas including those areas with environmental justice concerns. No change has been made to the proposed rule language based on this comment.

Comments from EPA:

1. *EPA commented that a section 110(l) demonstration will need to be submitted to modify the emission limit from 3 to 9 ppmdv corrected to 15% oxygen in the Wisconsin SIP. EPA recommended the section 110(l) demonstration include an emissions impact analysis of the sources affected by the emission limit change.*

   DNR Response - It is the department's practice to provide non-interference demonstrations required under CAA Section 110(l) for each of the proposed rule changes when the department submits the final rule to EPA for approval into the Wisconsin SIP. EPA's process for SIP review and approval provides additional opportunity for public comment. Because the proposed change to the emission limitation reflects current operating practices at affected facilities, no emissions increases will result. No change has been made to the proposed rule language based on this comment.

2. *EPA questioned the basis for allowing exceptions from requirements in cases when a secondary fuel is used only for startup.*

   DNR Response – Based on this comment, the department deleted startup language under ss. NR 428.04 (2) (i) 3., 428.05 (2) (f) 3., 428.05 (3) (f) 3., and 428.22 (3) (c).

3. *EPA commented that site-specific emission monitoring methods under ss. NR 428.04 (3) (b) and 428.05 (4) needed to be submitted to EPA for SIP approval in addition to being approved by the department.*

   DNR Response – In response to this comment, the department decided to retain the current language under ss. NR 428.04 (3) and 428.05 (4), as the proposed rule language was only intended to simplify and consolidate redundant language. The department may consider revising ss. NR 428.04 (3) (b) and 428.05 (4) during a future rulemaking after fully evaluating the revisions' potential impacts to the site-specific emission monitoring method approval process.

STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DOA-2049 (R09/2016)

DIVISION OF EXECUTIVE BUDGET AND FINANCE
101 EAST WILSON STREET, 10TH FLOOR
P.O. BOX 7864
MADISON, WI 53707-7864
FAX: (608) 267-0372

ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

1. Type of Estimate and Analysis	2. Date
☒ Original ☐ Updated ☐ Corrected	4/6/2023

3. Administrative Rule Chapter, Title and Number (and Clearinghouse Number if applicable)

NR 400 – Air Pollution Control Definitions
NR 428 – Control of Nitrogen Compound Emissions
NR 484 – Incorporation by Reference

CR 23-017

4. Subject
Revisions to nitrogen compound emissions regulations in ch. NR 428, AM-05-21.

5. Fund Sources Affected	6. Chapter 20, Stats. Appropriations Affected
☐ GPR ☐ FED ☐ PRO ☒ PRS ☐ SEG ☐ SEG-S	s. 20.370(4)(bo), s. 20.370(4)(cm), s. 20.370 (4)(co), Wis. Stats.

7. Fiscal Effect of Implementing the Rule

☒ No Fiscal Effect	☐ Increase Existing Revenues	☐ Increase Costs	☐ Decrease Costs
☐ Indeterminate	☐ Decrease Existing Revenues	☐ Could Absorb Within Agency's Budget	

8. The Rule Will Impact the Following (Check All That Apply)

☐ State's Economy	☒ Specific Businesses/Sectors
☐ Local Government Units	☐ Public Utility Rate Payers
	☐ Small Businesses **(if checked, complete Attachment A)**

9. Estimate of Implementation and Compliance to Businesses, Local Governmental Units and Individuals, per s. 227.137(3)(b)(1).
$109,200 annually

10. Would Implementation and Compliance Costs Businesses, Local Governmental Units and Individuals Be $10 Million or more Over Any 2-year Period, per s. 227.137(3)(b)(2)?
☐ Yes ☒ No

11. Policy Problem Addressed by the Rule

Nitrogen oxides (NOx) react with volatile organic compounds in the presence of sunlight to form ground-level ozone. Concentrations of ozone above the National Ambient Air Quality Standards (NAAQS) adversely impact human health and the environment. The U.S. Environmental Protection Agency (EPA) has designated several areas along the Lake Michigan shoreline in eastern Wisconsin as "nonattainment areas" due to ozone concentrations violating the NAAQS. Certain emissions sources located in nonattainment areas are subject to more stringent controls under the Clean Air Act (CAA).

Chapter NR 428, Wis. Adm. Code, regulates the emissions of NOx from certain stationary sources located in current ozone nonattainment areas and areas with a history of ozone nonattainment, including the counties of Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha. Subchapters I through III were added in January 2001 to fulfill the Rate of Progress/Reasonable Further Progress plans as required by Sections 172(c)(2) and 182(b)(1) of the CAA. Subchapter IV of this rule was added in July 2007 to include CAA Section 182(f) Reasonably Available Control Technology (RACT) requirements for major sources of NOx located in ozone nonattainment areas classified as Moderate (or a more stringent nonattainment classification).

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Since the promulgation of the 2001 and 2007 revisions to ch. NR 428, Wis. Adm. Code, the department has identified several implementation issues associated with certain parts of the chapter. The department is proposing revisions to the chapter to ensure clear and consistent implementation of this rule. The proposed changes include:

- Correcting the emission limit under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, for combined cycle combustion turbines with maximum design power output of 25 megawatt electrical (MWe) or greater and incorporating a site-specific emission limit alternative. These changes are necessary to ensure that limits are achievable in practice at all times of operation (e.g., including periods of emissions unit startup or shutdown).
- Clarifying emission limits and monitoring requirements that apply when a facility uses more than one type of fuel.
- Clarifying monitoring requirements for: kilns, furnaces, asphalt plants, process heating units, engines, and other types of units under s. NR 428.08(2), Wis. Adm. Code.
- Providing stationary sources the option to request an alternative time period to the default 180-day waiting period between the compliance monitoring plan submittal deadline and initial operation of a facility.
- Clarifying that the unit exception in s. NR 428.21(3), Wis. Adm. Code, applies only to units constructed before August 1, 2007, as originally intended.
- Updating cross references between s. NR 428.08(2)(g)4.a., Wis. Adm. Code, and federal methods for determining NOx emissions from stationary sources (s. NR 484.04 Table 2).

12. Summary of the Businesses, Business Sectors, Associations Representing Business, Local Governmental Units, and Individuals that may be Affected by the Proposed Rule that were Contacted for Comments.

Entities that may have an interest in the proposed rule include sources (establishments which emit or cause emissions of air contaminants) which are required to meet NOx emissions limits in ch. NR 428, Wis. Adm. Code. This includes sources in the following business sectors emitting NOx above specified thresholds that are located in affected areas: electric utilities, waste management, landfills, paper mills, glass manufacturing, hospitals, asphalt production, and other sources with large gas or diesel fired stationary engines. The department contacted all sources with permits that reference emission limits under ss. NR 428.04, 428.05, and 428.22, Wis. Adm. Code, as well as the Small Business Environmental Council and Wisconsin Manufacturers and Commerce. In addition, the Air Management Advisory Group, the air program's stakeholder working group, may be interested in the proposed rule. This group includes members representing Clean Wisconsin, environmental law attorneys, academia, utilities, and representatives of large and small businesses. The department contacted all these entities during the environmental impact analysis comment period via email.

13. Identify the Local Governmental Units that Participated in the Development of this EIA.

This rule does not impact local government units directly. However, the department contacted the Wisconsin Counties Association and the League of Wisconsin Municipalities via email so that counties and other local governmental units were consulted as part of the solicitation process. The department did not receive comments from governmental units.

14. Summary of Rule's Economic and Fiscal Impact on Specific Businesses, Business Sectors, Public Utility Rate Payers, Local Governmental Units and the State's Economy as a Whole (Include Implementation and Compliance Costs Expected to be Incurred)

(A) Economic Impact on Businesses

The only proposed change which may economically impact businesses is the incorporation of s. NR 428.08(2)(g), Wis. Adm. Code. The proposed language clarifies monitoring requirements for kilns, furnaces, asphalt plants, process heating units, engines, and other units. Currently there are no monitoring requirements explicitly defined for these types of units

under s. NR 428.08(2), Wis. Adm. Code, leading some to potentially conclude that either no compliance measures are required for these units or that continuous emissions monitoring systems (CEMS) are the only approvable compliance method for these units. This is an oversight from previous rulemakings. The proposed changes will improve clarity for businesses by ensuring that applicable monitoring requirements are defined clearly. Additionally, the proposed changes may reduce emissions of NOx to the environment by ensuring the department is able to consistently enforce NOx emission limits by way of requiring emissions monitoring at all applicable units. The proposed remedy under s. NR 428.08(2)(g), Wis. Adm. Code, offers facilities the flexibility to either operate a CEMS or meet specific operational and performance testing requirements. The department estimates that the potential annual cost of the rulemaking is $109,200 based on assumptions made as part of its analysis. The department's analysis is described below.

The department estimates that 21 units may be subject to s. NR 428.08(2)(g), Wis. Adm. Code. The number of potentially affected units was determined by conducting a search of facilities with kilns, furnaces, asphalt plants, process heating units, or engine units and whose permits reference the sections of ch. NR 428, Wis. Adm. Code, that could make them subject to s. NR 428.08(2)(g), Wis. Adm. Code (i.e., ss. NR 428.04, 428.05, and 428.20, Wis. Adm. Code).

Based on cost estimates gathered from CEMS manufacturers, initial costs for the purchase of a NOx CEMS, installation, and training are $53,500 to $150,000, depending on the system and facility, or $101,750 on average. Annualized costs to maintain a NOx CEMS are approximately $7,500 to $15,000 ($11,250 on average). The total annualized cost for the 21 potentially affected emissions units to comply with s. NR 428.08(2)(g), Wis. Adm. Code, over a 10-year period by operating a CEMS is $449,925.

Because CEMS are relatively expensive to operate and maintain, the department's proposed rule language also provides a more economical alternative to operating a CEMS in order to meet the requirements of s. NR 428.08(2)(g), Wis. Adm. Code.

Instead of operating a CEMS to comply with s. NR 428.08(2)(g), Wis. Adm. Code, facilities are given the flexibility to alternatively meet specific operational and performance testing requirements. The latter would require sources to meet a testing requirement every two years. The department estimates that the annualized cost of the biennial performance tests is $3,500 to $5,700, or $4,600 on average, for each affected emissions unit based on cost information gathered from companies that offer stack testing services. A small percentage of the identified 21 emissions units may have an initial one-time cost if the unit needs to be modified to allow for tests to be conducted. The cost of modification is expected to vary widely depending on unit material type (e.g., if the unit is designed to withstand extreme temperatures), unit location (e.g., if scaffolding or a lift is required), and mechanical modification (e.g., installation of sampling ports). The department estimates this potential one-time modification expense could be $2,000 to $10,000 ($6,000 average), and notes that outliers could exist. To be conservative, the department assumed all 21 units would have a $6,000 one-time modification cost to accommodate stack testing. The department expects that in reality only a few emissions units may incur an initial modification cost. The total annualized cost, including the potential initial modification costs and biennial performance test costs, over a 10-year period to comply with the operational and performance testing option in s. NR 428.08(2)(g), Wis. Adm. Code, is $109,200.

In estimating the cost associated with this revision, the department assumes a facility would opt for the less expensive performance testing approach to meet the proposed s. NR 428.08(2)(g), Wis. Adm. Code, requirements because the testing approach is approximately a quarter of the cost of operating a CEMS. The department also notes that the $109,200 is likely overestimated due to four factors. First, the number of affected emissions units is likely overestimated because some of the 21 identified emissions units may not be subject to the compliance requirements, based on the rule's emissions unit capacity thresholds. Second, the department expects that some sources would only be required to conduct tests every four years, instead of the standard two-year testing schedule, because some emissions units will meet the

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exception under s. NR 428.08(3)(a)1.b., Wis. Adm. Code. The department is not able to estimate how many units may be eligible for this exception as it is dependent on future emissions tests. Third, the department's analysis assumes none of the 21 emissions units are currently operating a CEMS (which could also be used to comply with s. NR 428.08(2)(g), Wis. Adm. Code). Fourth, some facilities may request and receive approval to use an alternative monitoring approach.

The department does not expect any other changes proposed as part of this rulemaking to have an economic impact on businesses. While the creation of additional exemption criteria in s. NR 428.21(3)(d), Wis. Adm. Code, is necessary to ensure NOx Reasonably Available Control Technology (RACT) requirements are appropriately applied, the department is not aware of any facility currently exempt, that would no longer be exempt after finalization of this proposed change. Additionally, the proposed NOx emission limit revision under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, will not result in an economic impact because the revised limit is equivalent to the NOx RACT emission limit under s. NR 428.22(1)(h)1., Wis. Adm. Code, for the same type of unit.

(B) Economic Impacts on Local Governments, Utility Rate Payers and Public Entities

The department does not anticipate that local governments, utility rate payers, or public entities will be economically impacted by the implementation of the proposed rule.

(C) State Economy

The department does not anticipate negative impacts to the state's economy. Ensuring consistent implementation of NOx emission limits will protect air quality and human health in the affected areas.

(D) Fiscal Impacts:

There are no fiscal impacts to this rule. This rule will not require additional state staff to implement or affect state revenues.

15. Benefits of Implementing the Rule and Alternative(s) to Implementing the Rule

The proposed rule will clarify existing requirements, establish emission limits that are achievable in practice, and ensure clear and consistent application of ch. NR 428, Wis. Adm. Code, requirements to limit NOx emissions. An alternative to implementing the rule is to not revise ch. NR 428, Wis. Adm. Code. The known ambiguities and implementation issues in ch. NR 428, Wis. Adm. Code, will continue to consume a disproportionate amount of industry and department time and resources if the proposed rule changes are not promulgated.

The alternative site-specific emission limit provision proposed under s. NR 428.055, Wis. Adm. Code, may accommodate transitions toward cleaner energy production and consumption. This proposed provision allows the department to set site-specific NOx emission limits in situations when applicable emission limits and other requirements under s. NR 428.04 or 428.05 are technologically or economically infeasible for the facility to meet. For example, a utility may plan to modify the operation schedule of its emissions units as it transitions away from coal and, as a result, may seek a site-specific NOx emission limit to accommodate these changes. Additionally, the proposed changes under s. NR 428.08(2), Wis. Adm. Code, may reduce emissions of NOx to the environment by ensuring the department is able to enforce NOx emission limits by way of requiring emissions monitoring at all applicable units.

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16. Long Range Implications of Implementing the Rule

Implementing the proposed rule will ensure clear and consistent application of ch. NR 428, Wis. Adm. Code, requirements while continuing to meet federal CAA requirements for protection of the NAAQS for ozone. The department does not anticipate any adverse long-term implications to implementing the rule. Ultimately, the department expects the proposed alternative site-specific emission limit provision may facilitate businesses' transitions toward cleaner energy production and consumption and ensure the department is able to enforce emissions monitoring requirements at all applicable NOx emissions units covered by ch. NR 428, Wis. Adm. Code.

17. Compare With Approaches Being Used by Federal Government

Sections 172(c)(2) and 182(b)(1) of the federal CAA require states with a Moderate (or a more stringent nonattainment classification) ozone nonattainment area to develop and implement "Reasonable Further Progress" plans to help the area reach attainment. Subchapters I through III of ch. NR 428, Wis. Adm. Code, were promulgated as part of Wisconsin's Reasonable Further Progress demonstration to reduce NOx emissions in the state's ozone nonattainment areas. Section 182(f) of the CAA requires states to implement Reasonably Available Control Technology (RACT) requirements for large sources of NOx emissions as defined by the CAA in Moderate (and more stringent nonattainment classifications) ozone nonattainment areas. Subchapter IV of ch. NR 428, Wis. Adm. Code, was promulgated to meet NOx RACT requirements for areas classified as Moderate nonattainment under the 1997 ozone NAAQS.

18. Compare With Approaches Being Used by Neighboring States (Illinois, Iowa, Michigan and Minnesota)

Wisconsin's NOx emission limits in ch. NR 428, Wis. Adm. Code, were compared to similar rules in the adjacent states of Michigan, Illinois, Iowa, and Minnesota, as well as Indiana. Portions of Wisconsin, Illinois, and Indiana comprise a tri-state area currently designated by EPA as nonattainment for the 2015 ozone NAAQS and was previously designated as nonattainment for the 2008 ozone NAAQS prior to being redesignated to attainment in 2022. As such, the three states are federally required to limit emissions of ozone precursors like NOx (e.g., CAA Section 182(f) NOx RACT requirements).

Unlike Wisconsin, Illinois's and Indiana's administrative rules limiting NOx emissions have not been approved by EPA as meeting CAA Section 182(f) NOx RACT requirements. Illinois has promulgated administrative rules limiting NOx emissions under Title 35 Part 217 of the Illinois Administrative Code. Overall, ch. NR 428, Wis. Adm. Code, establishes NOx emission limits based on emissions unit size and fuel type while the Illinois rules generally set NOx emission limits for broad categories of units (e.g., one emission limit for all solid fuel boilers above a certain maximum heat input). As a result, ch. NR 428, Wis. Adm. Code, sets many more emission limits compared to Illinois. For categories of emissions units that are directly comparable, the limits in ch. NR 428, Wis. Adm. Code, are similar to or slightly more stringent than the NOx emission limits in Illinois. Indiana has promulgated NOx emission limits under Title 326 Article 10 of the Indiana Administrative Code only for certain types of cement kilns and for a specific energy utility company.

Michigan's emissions limits for NOx are incorporated under Michigan Administrative Rules 336.1801-336.1834 and are similar to the NOx rules promulgated by Illinois in that emission limits are set for broad emissions unit categories and are approximately similar to or slightly less stringent than Wisconsin's rules (when direct comparison is possible). The department notes that Michigan only became subject to CAA Section 182(f) NOx RACT requirements in November 2022, whereas Illinois, Indiana, and Wisconsin became subject to NOx RACT requirements in 2004.

STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DOA-2049 (R09/2016)

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Minnesota and Iowa do not have ozone nonattainment areas classified Moderate, and as such, are not required to implement Reasonable Further Progress and NOx RACT requirements under the CAA like those in ch. NR 428, Wis. Adm. Code.

19. Contact Name	20. Contact Phone Number
Olivia Salmon	608-630-5264

This document can be made available in alternate formats to individuals with disabilities upon request.

8/9/23

The statement of scope for this rule, SS 064-21 was approved by the Governor on July 16, 2021, published in Register No. 787B on July 26, 2021, and approved by the Natural Resources Board on December 8, 2021. This rule was approved by the Governor on insert date.

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

The Wisconsin Natural Resources Board adopts an order to **amend** NR 428.04 (2) (g) 1. d., 428.05 (2) (b), 428.07 (1) (a) 2., 428.22 (1) (intro.), and 484.04 Table 2 Row (15m); to **repeal and recreate** NR 428.08 (2) (e) (title),; and to **create** NR 400.03 (4) (mf), 428.02 (7i), (7p), (7u), and (7w), 428.04 (2) (i) and (4) (c), 428.05 (2) (f), (3) (f), and (5) (c), 428.055, 428.08 (2) (f) (title), (g), and (3), 428.21 (3) (d), 428.22 (3) and 428.24 (1) (c), relating to nitrogen compound emissions regulations.

AM-05-21

Analysis Prepared by the Department of Natural Resources

1. Statute Interpreted: The State Implementation Plan developed under s. 285.11 (6), Wis. Stats., is revised.

2. Statutory Authority: Sections 227.11(2)(a), 285.11(1) and (6), Wis. Stats.

3. Explanation of Agency Authority: Section 227.11(2)(a), Wis. Stats., expressly confers rulemaking authority to an agency where such rules are necessary to effectuate the purpose of existing statutory authority. The department is required under s. 285.11(1), Wis. Stats., to promulgate and implement air pollution control rules consistent with ch. 285, Wis. Stats. In addition, s. 285.11(6), Wis. Stats., requires the department to prepare and develop comprehensive state implementation plans (SIPs) for prevention, control and abatement of air pollution and revise and implement those plans to conform with the Clean Air Act (CAA).

Several provisions of the CAA provide the federal statutory basis for this rule. Sections 172(c)(2) and 182(b)(1) of the CAA require the state to provide Reasonable Further Progress (RFP) plans for ozone nonattainment areas. Section 182(f) of the CAA requires Reasonably Available Control Technology (RACT) requirements for nitrogen oxides (NOx) to be included in the SIP for Moderate (and more stringent nonattainment classifications) ozone nonattainment areas.

4. Related Statutes or Rules: The proposed rule changes revise and clarify NOx control requirements contained in ch. NR 428, Wis. Adm. Code. A definition for a common abbreviation is added to ch. NR 400, Wis. Adm. Code. Proposed cross-reference updates in ch. NR 484, Wis. Adm. Code, align the chapter with the proposed revisions in ch. NR 428, Wis. Adm. Code.

5. Plain Language Analysis: NOx reacts with volatile organic compounds in the presence of sunlight to form ground-level ozone. Concentrations of ozone above the National Ambient Air Quality Standards (NAAQS) adversely impact human health and the environment. The U.S. Environmental Protection Agency (EPA) has designated several areas along the Lake Michigan shoreline in eastern Wisconsin as "nonattainment areas" due to ozone concentrations violating the NAAQS. Certain emissions sources located in nonattainment areas are subject to more stringent controls under the CAA.

Chapter NR 428, Wis. Adm. Code, regulates the emissions of NOx from certain stationary sources located in current ozone nonattainment areas and areas with a history of ozone nonattainment, including the counties of Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and

Waukesha. Subchapters I through III were added in January 2001 to fulfill the Rate of Progress/Reasonable Further Progress plans as required by Sections 172(c)(2) and 182(b)(1) of the CAA. Subchapter IV of this rule was added in July 2007 to include CAA Section 182(f) Reasonably Available Control Technology (RACT) requirements for major sources of NOx located in ozone nonattainment areas classified as Moderate (or more stringent nonattainment classifications).

Since the promulgation of the 2001 and 2007 revisions to ch. NR 428, Wis. Adm. Code, the department has identified several implementation issues associated with certain parts of the chapter. The department is proposing revisions to the chapter to ensure clear and consistent implementation of this rule. The proposed changes include clarifying exemption applicability, emission limits for units using more than one type of fuel, and emissions averaging requirements. The proposed rule also revises and clarifies existing compliance and monitoring requirements, corrects an emission limit for a specific type of unit, incorporates procedures for approving a source-specific emission limit alternative to ensure that limits are achievable in practice, and updates cross references. The specific proposed rule changes are described below:

Revised NOx emission limit

The department is proposing to correct the emission limit under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, for combined cycle combustion turbines with maximum design power output of 25 MWe or greater because, as written, the existing limit is not achievable in practice at all times of operation (e.g., during periods of startup or shutdown). The proposed change revises the NO_X emission limit from 3 parts per million, dry volume (ppmdv), corrected to 15% oxygen on a 30-day rolling average basis to 9 ppmdv, corrected to 15% oxygen on a 30-day rolling average basis. Because the proposed emission limit is reflective of current operations, including periods of startup and shutdown, the proposed rule change is not expected to result in an increase in actual emissions. Additionally, the proposed revision aligns the NOx emission limit adopted under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, to fulfill the Rate of Progress/Reasonable Further Progress plan requirement under CAA Sections 172(c)(2) and 182(b)(1) with the NOx emission limit for the same type of unit that was adopted under s. NR 428.22(1)(h)1., Wis. Adm. Code, to meet CAA Section 182(f) NOx RACT requirements. This proposed revision will reduce confusion in scenarios when an emissions unit is subject to both emissions limits simultaneously.

Proposed language under s. NR 428.055, Wis. Adm. Code, provides procedures allowing facilities to demonstrate that an emission limit listed in s. NR 428.04, Wis. Adm. Code, is technologically or economically infeasible and the opportunity to request a site-specific emission limit alternative. Emission limits set under this proposed provision must be approved by the department and approved into the Wisconsin SIP by EPA.

Clarify NOx emission limits during secondary fuel useage

The department is proposing to clarify emission limits and monitoring requirements under ss. NR 428.04, 428.05, 428.22, and 428.24, Wis. Adm. Code, that apply when a facility uses more than one type of fuel. The proposed revisions clarify the department's practice that a unit firing secondary fuel is not subject to emission limits and monitoring requirements when utilizing only the secondary fuel under certain circumstances. Applicable instances of secondary fuel use include:

- When the emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the corresponding applicability thresholds.
- When the emissions unit burns the secondary fuel only: during periods of curtailment or supply interruption of other fuel(s) not to exceed 500 hours in a 12 consecutive month time period; or periodic testing, maintenance, or operator training.
- When the emissions unit utilizes the secondary fuel only for startup or the fuel constitutes less than 1% of the unit's fuel consumption within a 12 consecutive month time period.

Clarify monitoring requirements for specific categories of emissions units

Proposed language under s. NR 428.08(2), Wis. Adm. Code, incorporates an alternative to operating a continuous emissions monitoring system (CEMS) by meeting operational and performance testing requirements for: kilns, furnaces, asphalt plants, process heating units, engines, and other units. Currently there are no monitoring requirements specified for these types of units under s. NR 428.08(2), Wis. Adm. Code.

Revise compliance monitoring plan submittal deadline

The department is proposing to revise the deadline for compliance monitoring plan submittals under s. NR 428.07(1)(a)2., Wis. Adm. Code, from "at least 180 days prior to initial operation" to "at least 180 days prior to initial operation, or an alternative date less than 180 days approved by the department." The previous rule language required plans to be submitted 180 days before initial operation. This means a source would have been required to wait for the 180-day period to end prior to operating, even if the source was permitted and physically capable of operation prior to that date. The revised rule language allows the source to request an alternative date to avoid the waiting period if necessary.

Clarify exception

The department is proposing to clarify that the unit exception under s. NR 428.21(3), Wis. Adm. Code, applies only to units constructed before August 1, 2007, as originally intended.

Definitions

The department is proposing to incorporate definitions related to secondary fuel usage scenarios and specific types of emissions units under s. NR 428.02, Wis. Adm. Code.

Cross references

The department is proposing to update cross references through ch. NR 428, Wis. Adm. Code, to be consistent with the proposed rule language.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations: Sections 172(c)(2) and 182(b)(1) of the federal CAA require states with a Moderate (or a more stringent nonattainment classification) ozone nonattainment area to develop and implement "Reasonable Further Progress" plans to help the area reach attainment. Subchapters I through III of ch. NR 428, Wis. Adm. Code, were promulgated as part of Wisconsin's Reasonable Further Progress demonstration to reduce NOx emissions in the state's ozone nonattainment areas. Section 182(f) of the CAA requires states to implement Reasonably Available Control Technology (RACT) requirements for large sources of NOx emissions as defined by the CAA in Moderate (and more stringent nonattainment classifications) ozone nonattainment areas. Subchapter IV of ch. NR 428, Wis. Adm. Code, was promulgated to meet NOx RACT requirements for areas classified as Moderate nonattainment under the 1997 ozone NAAQS. The proposed rule changes are intended to clarify ambiguities in ch. NR 428, Wis. Adm. Code, and ensure implementation of this rule is consistent with CAA requirements.

7. If Held, Summary of Comments Received During Preliminary Comment Period and at Public Hearing on the Statement of Scope: The department held an online preliminary public hearing on the statement of scope on November 5, 2021. Nine members of the public attended the hearing. Two attendees registered in support of the proposed scope statement; one of these members provided a verbal comment reiterating their support. No other verbal comments were provided.

The public comment period ended on November 5, 2021. The department received no written comments on the proposed statement of scope.

8. Comparison with Similar Rules in Adjacent States: Wisconsin's NOx emission limits in ch. NR 428, Wis. Adm. Code, were compared to similar rules in the adjacent states of Michigan, Illinois, Iowa and Minnesota, as well as Indiana. Portions of Wisconsin, Illinois, and Indiana comprise a tri-state area currently designated by EPA as nonattainment for the 2015 ozone NAAQS. This same tri-state area was previously designated as nonattainment for the 2008 ozone NAAQS until being redesignated to attainment in 2022. As such, the three states are federally required to limit emissions of ozone precursors, including NOx (e.g., CAA Section 182(f) NOx RACT requirements).

Unlike Wisconsin, Illinois's and Indiana's administrative rules limiting NOx emissions have not been approved by EPA as meeting CAA Section 182(f) NOx RACT requirements. Illinois has promulgated administrative rules limiting NOx emissions under Title 35 Part 217 of the Illinois Administrative Code. Overall, ch. NR 428, Wis. Adm. Code, establishes NOx emission limits based on emissions unit size and fuel type while the Illinois rules generally set NOx emission limits for broad categories of units (e.g., one emission limit for all solid fuel boilers above a certain maximum heat input). As a result, ch. NR 428, Wis. Adm. Code, sets many more emission limits relative to Illinois. For categories of emissions units that are directly comparable, the limits in ch. NR 428, Wis. Adm. Code, are similar to or slightly more stringent than the NOx emission limits in Illinois. Indiana has promulgated NOx emission limits under Title 326 Article 10 of the Indiana Administrative Code only for certain types of cement kilns and for a specific energy utility company.

Michigan's NOx emissions limits are incorporated under Michigan Administrative Rules 336.1801-336.1834 and are similar to the NOx rules promulgated by Illinois in that emission limits are set for broad emissions unit categories and are similar to or slightly less stringent than Wisconsin's rules (when direct comparison is possible). Michigan, however, only became subject to CAA Section 182(f) NOx RACT requirements in November 2022, whereas Illinois, Indiana, and Wisconsin became subject to NOx RACT requirements in 2004.

Minnesota and Iowa do not have ozone nonattainment areas classified Moderate, and as such, are not required to implement Reasonable Further Progress and NOx RACT requirements under the Clean Air Act like those in ch. NR 428, Wis. Adm. Code.

9. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen: The proposed rule changes address known implementation issues with ch. NR 428, Wis. Adm. Code, rule language promulgated in 2001 and 2007. With the exception of one revised emission limit which is being proposed because the existing limit is not achievable in practice, this rulemaking primarily clarifies and streamlines the rule chapter.

The department is proposing to revise the NO_X emission limit for gaseous fuel-fired, combined cycle combustion turbines with maximum design power output of 25 MWe or greater under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, because the current limit is not achievable in practice at all times of operation by combined cycle turbines in this category (e.g., during startup and shutdown). The proposed modification would change the NO_X emission limit from 3 ppmdv corrected to 15% oxygen on a 30-day rolling average basis to 9 ppmdv, corrected to 15% oxygen on a 30-day rolling average basis. This change would align the NOx emission limit under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, which was promulgated in 2001, with the NOx emission limit incorporated in 2007 under s. NR 428.22(1)(h)1., Wis. Adm. Code, and approved by EPA as RACT, for the same type of unit.

The technical basis for the NOx RACT limits set in subchapter IV of ch. NR 428, Wis. Adm. Code, were described in detail in Attachment A of the green sheet adoption package for Board Order AM-17-05 (https://p.widencdn.net/zplhxb/04-07-3A1). The NOx RACT limits promulgated under Board Order AM-

17-05/Clearinghouse Rule 07-016 were based on the department's review of available control technologies and their cost-effectiveness in dollars per ton of controlled NOx. The department's evaluation followed the methods established in EPA's Alternative Control Technology documents for NOx source categories (https://www3.epa.gov/airquality/ctg_act/).

The NOx emissions limits under s. NR 428.04, Wis. Adm. Code, were promulgated in 2001. At that time, state and federal regulations set emissions limits under the assumption that emissions during periods of startup and shutdown would be excluded. After a court decision found this practice to be inconsistent with the CAA (*Sierra Club v. Johnson*, 551 F.3d 1019 (D.C. Cir. 2008)), regulators began specifying that emission limits apply at all times of operation. The department is proposing to change the emission limit under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, from 3 ppmdv to 9 ppmdv at 15% oxygen for combined cycle combustion turbines with maximum design power output of 25 MWe or greater because it has found that the 3 ppmdv limit is not achievable in practice at all times of operation (e.g., during periods of startup and shutdown). Because the proposed emission limit is reflective of current operations, the proposed rule change is not expected to result in an increase in actual emissions.

10. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report: The only proposed change which may economically impact businesses is the incorporation of s. NR 428.08(2)(g), Wis. Adm. Code. The proposed language clarifies monitoring requirements for kilns, furnaces, asphalt plants, process heating units, engines, and other units. Currently there are no monitoring requirements explicitly defined for these types of units under s. NR 428.08(2), Wis. Adm. Code, leading some to potentially conclude that either no compliance methods are required for these units or that continuous emissions monitoring systems (CEMS) are the only approvable compliance method for these units. This is an oversight from previous rulemakings. The proposed changes will improve clarity for businesses by ensuring that applicable monitoring requirements are clearly defined. Additionally, the proposed changes may reduce emissions of NOx to the environment by ensuring the department is able to enforce NOx emission limits by way of requiring emissions monitoring at all applicable units. The proposed remedy under s. NR 428.08(2)(g), Wis. Adm. Code, offers facilities the flexibility to either operate a CEMS or meet specific operational and performance testing requirements. The department estimates that the potential annual cost of the rulemaking is $109,200 based on assumptions made as part of its analysis. The department's analysis is described below.

The department estimates that 21 units may be subject to s. NR 428.08(2)(g), Wis. Adm. Code. The number of potentially affected units was determined by conducting a search of facilities with kilns, furnaces, asphalt plants, process heating units, or engine units and whose permits reference the sections of ch. NR 428, Wis. Adm. Code, that could make them subject to s. NR 428.08(2)(g), Wis. Adm. Code (i.e., ss. NR 428.04, 428.05, and 428.20, Wis. Adm. Code).

Based on cost estimates gathered from CEMS manufacturers, initial costs for the purchase of a NOx CEMS, installation, and training are $53,500 to $150,000, depending on the system and facility, or $101,750 on average. Annualized costs to maintain a NOx CEMS are approximately $7,500 to $15,000 ($11,250 on average). The total annualized cost for the 21 potentially affected emissions units to comply with s. NR 428.08(2)(g), Wis. Adm. Code, over a 10-year period by operating a CEMS is $449,925. Because CEMS are relatively expensive to operate and maintain, the department's proposed rule language also provides a more economical alternative to operating a CEMS in order to meet the requirements of s. NR 428.08(2)(g), Wis. Adm. Code.

Instead of operating a CEMS to comply with s. NR 428.08(2)(g), Wis. Adm. Code, facilities are given the flexibility to alternatively meet specific operational and performance testing requirements. The latter

would require sources to meet a testing requirement every two years. The department estimates that the annualized cost of the biennial performance tests is $3,500 to $5,700, or $4,600 on average, for each affected emissions unit based on cost information gathered from companies that offer stack testing services. A small percentage of the identified 21 emissions units may have an initial one-time cost if the unit needs to be modified to allow for tests to be conducted. The cost of modification is expected to vary widely depending on unit material type (e.g., if the unit is designed to withstand extreme temperatures), unit location (e.g., if scaffolding or a lift is required), and mechanical modification (e.g., installation of sampling ports). The department estimates this potential one-time modification expense could be $2,000 to $10,000 ($6,000 average), and notes that outliers could exist. To be conservative, the department assumed all 21 units would have a $6,000 one-time modification cost to accommodate stack testing. The department expects that in reality, only a few emissions units may incur an initial modification cost. The total annualized cost, including the potential initial modification costs and biennial performance test costs, over a 10-year period to comply with the operational and performance testing option in s. NR 428.08(2)(g), Wis. Adm. Code, is $109,200.

In estimating the cost associated with this revision, the department assumes a facility would opt for the less expensive performance testing approach to meet the proposed s. NR 428.08(2)(g), Wis. Adm. Code, requirements because the testing approach is approximately a quarter of the cost of operating a CEMS. The department also notes that the $109,200 is likely overestimated due to four factors. First, the number of affected emissions units is likely overestimated because some of the 21 identified emissions units may not be subject to the compliance requirements, based on the rule's emissions unit capacity thresholds. Second, the department expects that some sources would only be required to conduct tests every four years, instead of the standard two-year testing schedule, because some emissions units will meet the exception under s. NR 428.08(3)(a)1.b., Wis. Adm. Code. The department is not able to estimate how many units may be eligible for this exception as it is dependent on future emissions tests. Third, the department's analysis assumes none of the 21 emissions units are currently operating a CEMS, which could also be used to comply with s. NR 428.08(2)(g), Wis. Adm. Code. Fourth, some facilities may request and receive approval to use an alternative monitoring approach.

The department does not expect any other changes proposed as part of this rulemaking to have an economic impact on businesses. While the creation of additional exemption criteria in s. NR 428.21(3)(d), Wis. Adm. Code, is necessary to ensure NOx RACT requirements are appropriately applied, the department is not aware of any facility currently exempt, that would no longer be exempt after finalization of this proposed change. Additionally, the proposed NOx emission limit revision under s. NR 428.04(2)(g)1.d., Wis. Adm. Code, will not result in an economic impact because the revised limit is equivalent to the NOx RACT emission limit under s. NR 428.22(1)(h)1., Wis. Adm. Code, for the same type of unit.

11. Effect on Small Business (initial regulatory flexibility analysis): Chapter NR 428, Wis. Adm. Code, primarily applies to facilities with high NOx emissions, and those facilities in Wisconsin have tended to not meet the definition of small business. The proposed revisions are intended to clarify existing requirements and to ensure clear and consistent implementation of ch. NR 428, Wis. Adm. Code. The proposed changes to ch. NR 428, Wis. Adm. Code, will not result in any existing facility, small business or otherwise, becoming newly subject to NOx emissions regulations upon promulgation of this rule.

12. Agency Contact Person: Olivia Salmon, Department of Natural Resources, P.O. Box 7921, Madison, WI 53707-7921; Olivia.Salmon@wisconsin.gov; (608) 630-5264

13. Place where comments are to be submitted and deadline for submission:
A public comment period occurred from May 1 through June 7, 2023, and a public hearing was held on May 31, 2023.

RULE TEXT

SECTION 1. NR 400.03 (4) (mf) is created to read:

NR 400.03 (4) (mf) "SIP" – state implementation plan

SECTION 2. NR 428.02 (7i), (7p), (7u) and (7w) are created to read:

NR 428.02 (7i) "Primary fuel" means the fuel types that provide the greatest amount of heat input, in terms of mmBtu, to a combustion unit. A combustion unit may have more than one primary fuel.

(7p) "Secondary fuel" means any fuel that is not a primary fuel.

(7u) "Simple cycle stationary combustion turbine" means any stationary combustion turbine that does not recover heat from the stationary combustion turbine exhaust gases.

(7w) (a) "Supply interruption" or "curtailment" means a period of time during which the supply of primary fuel to an emissions unit is reduced for reasons beyond the control of the facility.

(b) "Supply interruption" or "curtailment" may not result from an increase in the cost or unit price of the primary fuel.

SECTION 3. NR 428.04 (2) (g) 1. d. is amended to read:

NR 428.04 (2) (g) 1. d. ~~3~~ 9 parts per million dry volume (ppmdv), corrected to ~~15%~~ 15 percent oxygen, on a 30-day rolling average basis for a combined cycle combustion turbine with a maximum design power output of 25 MWe or greater.

SECTION 4. NR 428.04 (2) (i) and (4) (c) are created to read:

NR 428.04 (2) (i) *Emissions units using secondary fuel.* An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(4) (c) The owner or operator claiming exemption from the requirements under sub. (2) pursuant to sub. (2) (i) shall keep a record of all of the following:

1. Each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

2. The reason for each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

3. The monthly and yearly total hours for each occurrence when a secondary fuel was burned in accordance with the provisions under sub. (2) (i).

4. Other relevant information as required by the department.

SECTION 5. NR 428.05 (2) (b) is amended to read:

NR 428.05 (2) (b) Except as provided ~~in~~ under par. (a)~~or~~, (c), or (f) the following categories of NOx emissions units listed ~~in~~ under this subsection shall complete a combustion optimization to minimize NOx emissions in accordance with s. NR 439.096 by December 31, 2002~~.~~:

SECTION 6. NR 428.05 (2) (f), (3) (f) and (5) (c) are created to read:

NR 428.05 (2) (f) An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(3) (f) *Emissions units using secondary fuel.* An emissions unit that is capable of firing secondary fuel is not subject to the requirements under this subsection when utilizing only a secondary fuel if any of the following apply:

1. The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under this subsection.

2. The emissions unit burns the secondary fuel only during any of the following periods:

a. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this paragraph may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

b. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

3. The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

(5) (c) The owner or operator claiming exemption to the requirements under subs. (2) and (3) pursuant to subs. (2) (f) and (3) (f) shall keep a record of all of the following:

1. Each occurrence when the fuel denoted under subs. (2) (f) and (3) (f) was burned.

2. The reason for each occurrence when fuel denoted under subs. (2) (f) and (3) (f) was burned.

3. The monthly and yearly total hours of operation for each fuel used as specified under subs. (2) (f) and (3) (f).

4. Other relevant information as required by the department.

SECTION 7. NR 428.055 is created to read:

NR 428.055 Alternatives.

(1) ALTERNATIVE AUTHORITY**.** The owner or operator of a NOx emissions source may submit a request to the department requesting approval to establish an alternative site-specific emission limitation to one or more of the requirements under s. NR 428.04 or 428.05. The owner or operator shall demonstrate that compliance with requirements under s. NR 428.04 or 428.05 are technologically or economically infeasible. Application for an alternative to any emission limitation under this subchapter does not become effective until approved by the department and the administrator as a site-specific SIP revision and shall be subject to requirements under subs. (2) to (5).

(2) ALTERNATIVE CRITERIA. The department may not approve an alternative site-specific emission limitation under sub. (1) unless:

(a) The alternative will not delay attainment or prevent maintenance of any ambient air quality standard, as determined by methods acceptable to the department.

(b) The owner or operator of the air contaminant source for which an alternative is requested demonstrates that all other direct or portable sources that it owns or operates in the state are in compliance with all applicable requirements under chs. NR 400 to 499 or are on a schedule for compliance with the requirements.

(c) The owner or operator submits to the department information concerning the conditions or special circumstances that demonstrate, to the department's satisfaction, that the applicable requirements from which variance is sought are technologically or economically infeasible. In addition, all of the following conditions are applicable:

1. The owner or operator shall submit proposed emission limitations to the department in writing.

2. The responsible official shall sign the request for alternatives on behalf of the owner or operator.

3. The owner or operator shall submit other relevant information as required by the department.

(3) PROCEDURES FOR ISSUANCE OF ALTERNATIVES. The department, in acting upon any request for an alternative site-specific emission limitation under this section, shall do all of the following:

(a) Act on requests for alternatives within 3 months of the filing of a completed request.

(b) Offer, through public notice, the opportunity for public comments including, where requested, a public hearing.

(c) State in writing the reasons for denying, granting, or for granting in modified form any request.

(4) REVOCATION AND MODIFICATION OF ALTERNATIVES. The department may, after notice and opportunity for hearing, revoke or modify any alternative site-specific emission limitation when any of the following occurs:

(a) Any term or condition of the alternative has been violated.

(b) Changes in ambient air quality indicate that the source has a significant adverse impact as

determined by methods acceptable to the department on the attainment or maintenance of any ambient air quality standard.

(c) The owner or operator did not act in good faith in demonstrating the technological or economic infeasibility of compliance with the limitations or in submitting other relevant information in support of the alternative request.

(5) EFFECTIVE DATE OF ALTERNATIVES. When the department grants, modifies, or revokes a site-specific alternative to a limitation that has been approved by the administrator as part of the SIP, the alternative will not become effective until all of the following conditions have been met:

(a) The department has submitted the alternative to the administrator pursuant to applicable law, including 42 USC 7410 and 40 CFR parts 51 and 52, and all such requirements have been met.

(b) The alternative has been approved by the administrator as a site-specific SIP revision.

SECTION 8. NR 428.07 (1) (a) 2. is amended to read:

NR 428.07 (**1**) (a) 2. For an emissions unit subject to emission limitations ~~in~~ under s. NR 428.04 (2), at least 180 days prior to initial operation, or an alternative date approved by the department.

SECTION 9. NR 428.08 (2) (e) (title) is repealed and recreated to read:

NR 428.08 (**2**) (e) (title) *Boilers or turbines*.

SECTION 10. NR 428.08 (2) (f) (title), (g), and (3) are created to read:

NR 428.08 (2) (f) (title) *Continuous emissions monitoring.*

(g) *Testing*. An owner or operator of an emissions unit not listed under pars. (a) to (e) shall either install and operate a continuous NOx emissions monitoring system according to the requirements under 40 CFR part 75, or do all of the following to satisfy the requirements under this subsection:

1. Keep and maintain the emissions unit manufacturer's specifications and emissions factor information for the emissions unit on-site and available for review.

2. Comply with any applicable standards under sections 111 or 112 of the Clean Air Act (42 USC 7411 or 7412).

3. Maintain the emissions unit in accordance with the manufacturer's operation and maintenance instructions.

4. Conduct an initial performance test within 180 days after initial operation and subsequent performance tests every 2 years thereafter, within 90 days of the anniversary date of the initial performance test, according to all of the following requirements, as applicable, to determine the emissions unit's NOx emissions rate for each fuel fired in the emissions unit:

a. The emissions performance test shall be conducted according to one of the following methods as applicable: Method 7, 7A, 7B, 7C, 7D, or 7E under 40 CFR part 60, Appendix A, incorporated by reference under s. NR 484.04 (15m) Table 2, or another method approved by the department in advance.

b. The initial emissions performance test shall include a determination of the capacity load point of the emissions unit's maximum NOx emissions rate based on one 30 minute test run at each capacity load point for which the unit is operated, other than for startup and shutdown, in the load ranges of 25 to 50 percent, 50 to 75 percent, and 75 to 100 percent, or other load ranges approved by or required by the department in advance.

c. The emissions performance test shall determine compliance based on the average of three test runs that are at least 60 minutes performed at the capacity load determined to have the maximum NOx emission rate under subd. 4. b.

d. An additional performance test shall be conducted according to subd. 4. b. within 90 days of completing a physical change in, or change in the method of operation that causes an increase of the hourly potential to emit of the NOx emissions rate.

e. A performance test is not required for a fuel used only for startup or for a fuel constituting less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent12 consecutive month time period.

(3) EXCEPTIONS. (a) In lieu of the exceptions under s. NR 439.075 (4), all of the following exceptions apply to the testing required under sub. (2) (g):

1. The department may grant a written waiver of a scheduled test if any of the following apply:

a. The direct stationary source associated with the emissions point subject to the testing requirement will be ceasing operation within one year of a scheduled test.

b. The most recently completed results from a test conducted according to the methods and procedures specified under s. NR 439.07 for the direct stationary source demonstrate that the emissions of the air contaminant for which compliance emissions testing is required under this section are 50 percent or less of the applicable emission limitation. If a waiver from a test is granted, the owner or operator shall then conduct the next test according to the schedule under sub. (2) (g) 4.

c. The direct stationary source associated with the emissions point subject to the testing requirement has not operated more than 360 hours in the 12-month period prior to the scheduled test date.

d. The most recently completed test, conducted according to the methods and procedures specified under s. NR 439.07, was conducted less than 12 months prior to the date that testing would be required under par. (b).

e. For each fuel used, the emissions unit is certified to meet emissions standards under 40 CFR part 60 that are equal to or more restrictive than the applicable emission limitation under s. NR 428.04 or 428.05, and the emissions unit is installed and configured according to the manufacturer's specifications.

f. The emissions unit is operated only to restart electric generation in the event of a complete loss of facility power.

g. The emissions unit is operated no more than 500 hours per year and no more than 200 hours during the ozone season, and its only purpose is to provide electricity to a facility if normal electricity service is interrupted or to replace normal critical operations at a facility.

h. The emissions unit's only function is to pump water in the case of a fire emergency.

i. The emissions unit utilization is less than 10 percent of its capacity factor on an annual average basis over a 3-year rolling period and less than 20 percent of its capacity factor in any year of the 3-year rolling period and that is owned or operated by an electric generation utility or gas transmission utility.

j. The emissions unit is a research or development unit.

k. The emissions unit is an engine testing operation or process line.

L. The emissions unit is a gaseous fuel fired unit used to control VOC emissions from a commercial or industrial process.

2. The department may grant an extension of up to 180 days for compliance emissions testing if the owner or operator of a direct stationary source requests an extension, in writing, and can demonstrate that a representative emissions test cannot be performed within the time frame specified under sub. (2) (g) 4.

(b) The owner or operator shall submit a request for a waiver or extension under par. (a) 1. in writing for department review and approval at least 60 days prior to the required test date.

SECTION 11. NR 428.21 (3) (d) is created to read:

NR 428.21 (3) (d) The emissions unit was constructed prior to August 1, 2007.

SECTION 12. NR 428.22 (1) (intro.) is amended to read:

NR 428.22 (1) EMISSIONS LIMITS. Except as provided ~~in sub.~~ under subs. (2) and (3), on or after May 1, 2009, no person may cause, allow, or permit NO_X to be emitted in excess of the following emission limitations on a 30-day rolling average basis:

SECTION 13. NR 428.22 (3) is created to read:

NR 428.22 (3) EMISSIONS UNITS USING SECONDARY FUEL. An emissions unit that is capable of firing secondary fuel is not subject to the requirements under sub. (1) or (2) when utilizing only a secondary fuel if any of the following apply:

(a) The emissions unit heat input capacity or maximum design power output while utilizing the secondary fuel is less than the applicability thresholds under sub. (1) or (2).

(b) The emissions unit burns the secondary fuel only during any of the following periods:

1. Supply interruption or curtailment of primary fuel. The secondary fuel usage under this subsection may not exceed 500 hours within a 12 consecutive month time period unless the owner or operator obtains a fuel variance under s. NR 436.06.

2. Periodic testing, maintenance, or operator training of the secondary fuel when the periodic testing, maintenance, or operator training does not exceed a combined total of 48 hours during any calendar year.

(c) The secondary fuel constitutes less than 1 percent on an energy equivalent basis of the emissions unit's fuel consumption within the most recent 12 consecutive month time period.

SECTION 14. NR 428.24 (1) (c) is created to read:

NR 428.24 (1) (c) *Secondary fuel usage recordkeeping.* The owner or operator claiming exemption from the requirements under s. NR 428.22 pursuant to s. NR 428.22 (3) shall keep a record of all of the following:

1. Each occurrence when the fuel denoted under s. NR 428.22 (3) was burned.

2. The reason for each occurrence when the fuel denoted under s. NR 428.22 (3) was burned.

3. The monthly and yearly total hours of operation for each fuel used as specified under s. NR 428.22 (3).

4. Other relevant information as required by the department.

SECTION 15. NR 484.04 Table 2 Row (15m) is amended to read:

Table 2
CFR Appendix References

	CFR Appendix Referenced	Title	Incorporated by Reference For
(15m)	40 CFR part 60 Appendix A, Method 7, 7A, 7B, 7C, 7D and 7E	Determination of nitrogen oxide emissions from stationary sources	NR 428.23 (1) (b) 3. a. NR 428.08 (2) (g) 4. a.

SECTION 16. EFFECTIVE DATE. This rule takes 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 17. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on [DATE].

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN

8/9/23

DEPARTMENT OF NATURAL RESOURCES

BY _____

For Adam N. Payne, Secretary

Notice of Hearing

The Department of Natural Resources announces that it will hold a public hearing on a permanent rule to revise chs. NR 400, 428 and 484, relating to nitrogen compound emissions regulations (Board Order AM-05-21), at the time and location shown below.

The public hearing concerns the proposed revision of Wisconsin's State Implementation Plan (SIP) developed under s. 285.11(6), Stats. Final rules affecting chs. NR 400, 428 and 484, Wis. Adm. Code, promulgated under this rulemaking will be submitted to the United States Environmental Protection Agency (EPA) for approval and incorporation into Wisconsin's SIP.

This public hearing notice and request for comments satisfies requirements in ch. 227, Stats., for rulemaking and 40 CFR Part 51.102 for submittal of the final rules to EPA as a revision to Wisconsin's SIP.

Hearing Information

Date: Wednesday, May 31, 2023

Time: 9:30 a.m. central time

Virtual Location Link:
— Online via Zoom: https://us02web.zoom.us/j/82014995015
— Call in: 1 305 224 1968
— Meeting ID: 820 1499 5015

Rule Information

Nitrogen oxides (NO_X) react with volatile organic compounds in the presence of sunlight to form ground-level ozone. Concentrations of ozone above the National Ambient Air Quality Standards (NAAQS) are known to adversely impact human health and the environment. The U.S. Environmental Protection Agency has designated several areas along the Lake Michigan shoreline in eastern Wisconsin as "nonattainment areas" due to ozone concentrations violating the NAAQS. Emissions sources located in nonattainment areas are subject to more stringent controls under the Clean Air Act. Chapter NR 428, Wis. Adm. Code, regulates the emissions of NO_X from certain stationary sources located in current ozone nonattainment areas and areas with a history of ozone nonattainment.

Since the last time ch. NR 428, Wis. Adm. Code, was revised in 2007, the department has identified several implementation issues associated with certain parts of the chapter. The department is proposing revisions to the chapter to ensure clear and consistent implementation of this rule. The proposed changes include:

- Correcting the emission limit for certain categories of combined cycle combustion turbines and incorporating a site-specific emission limit alternative. These changes are necessary to ensure that limits are achievable in practice at all times of operation.
- Clarifying emission limits and monitoring requirements that apply when a facility uses more than one type of fuel.
- Combining and streamlining redundant monitoring requirements in s. NR 428.04(3)(a) and (b), Wis. Adm. Code.
- Clarifying monitoring requirements for kilns, furnaces, asphalt plants, process heating units, engines, and other types of units under s. NR 428.08(2), Wis. Adm. Code.

— Providing stationary sources the option to request an alternative time period to the default 180-day waiting period between the compliance monitoring plan submittal deadline and initial operation of a facility.
— Clarifying that the unit exception in s. NR 428.21(3), Wis. Adm. Code, applies only to units constructed before August 1, 2007, as originally intended.
— Updating cross references to federal methods for determining NOx emissions from stationary sources.

Accessibility

For the hearing or visually impaired, non-English speakers, or those with other personal circumstances which might make communication at the meeting/hearing difficult, DNR will, to the maximum extent possible and with reasonable advance notice, provide aids including an interpreter, or a non-English, large-print, or recorded version of hearing documents. To access these resources, please contact the email address or phone number listed below as soon as possible.

Appearances at the Hearing and Submittal of Written Comments

The public has the opportunity to testify at the hearing. Pre-registration is strongly encouraged if you plan to provide spoken comments during the hearing. To pre-register, either use the Zoom link above prior to the day of the hearing or download and complete the fillable hearing appearance form and send it to olivia.salmon@wisconsin.gov.

Comments on the proposed rule must be received on or before June 7, 2023. Written comments may be submitted by U.S. mail, E-mail, or through the internet and will have the same weight and effect as oral statements presented at the public hearing.

Written comments and any questions on the proposed rules should be submitted to:

Olivia Salmon – AM/7
Bureau of Air Management
Department of Natural Resources,
101 S. Webster Street
Madison, WI 53703
(608) 630-5264
olivia.salmon@wisconsin.gov

The rule may be viewed at: https://dnr.wi.gov/news/input/ProposedPermanent.html

Comments can be made at: DNRAdministrativeRulesComments@wisconsin.gov

The rule may be reviewed, and comments made at: http://docs.legis.wisconsin.gov/code/chr/hearings.

Initial Regulatory Flexibility Analysis

The proposed revisions are intended to clarify existing requirements and to ensure clear and consistent implementation of ch. NR 428, Wis. Adm. Code. The proposed changes to ch. NR 428, Wis. Adm. Code, will not result in any existing facility, small business or otherwise, becoming newly subject to NOx RACT emission limits upon promulgation of this rule.

Agency Small Business Regulatory Coordinator:

Emma Esch (608) 266-1959
emma.esch@wisconsin.gov

Full text of the specified Administrative Register, except Inserted Chapters published in the Register.

Wisconsin Administrative Register No. 809A1

Published every Monday by the Legislative Reference Bureau under s. 35.93, Wis. Stats.

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Expires: **March 1, 2024, or until permanent rules are promulgated, whichever is sooner**

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Chs. NR 800- ; Environmental Protection – Water Supply

ch. NR 812

New cement formulations for the construction of water wells

EmR2215

Expires: **June 28, 2023**

First Extension

Board of Nursing (N)

ch. N 2

Modification of Board review process to take the NCLEX

EmR2214

Expires: **June 8, 2023**

First Extension

Department of Health Services (DHS)

Chs. DHS 110-199; Health

ch. DHS 110

Emergency medical services licensing, certification, and training requirements

EmR2213

Expires: **May 1, 2024, or until the date on which permanent rules take effect, whichever is sooner**

Pharmacy Examining Board (Phar)

ch. Phar 1

ch. Phar 5

ch. Phar 6

ch. Phar 7

ch. Phar 8

Remote dispensing

EmR2212

Expires: **May 12, 2023**

First Extension

Department of Workforce Development (DWD)

Chs. DWD 80-81; Worker's Compensation

ch. DWD 80

Worker's compensation computation of the weekly wage for part-time employees

EmR2206

Expires: **May 31, 2023**

First Extension

Physician Assistant Affiliated Credentialing Board (PA)

ch. PA 1

ch. PA 2

ch. PA 3

ch. PA 4

ch. PA 5

Physician assistants

EmR2127

Expires: **November 2, 2023, or until permanent rules take effect, whichever is sooner**

Psychology Examining Board (Psy)

ch. Psy 1

ch. Psy 2

ch. Psy 4

Definitions, interim psychologist licensure requirements, reciprocity requirements, reciprocal credentials for service members, former service members, and their spouses, supervised psychological experience, temporary practice for out of state providers, and renewal requirements

EmR2124

Expires: **July 1, 2023, or the date on which the permanent rules take effect, whichever is sooner.**

Department of Children and Families (DCF)

Chs. DCF 021-99; Safety and Permanence

ch. DCF 61

Qualified residential treatment programs

EmR2111

Expires: **The date on which rules promulgated pursuant to s. 94.55 (3w), Stats., take effect.**

Department of Agriculture, Trade and Consumer Protection (ATCP)

Chs. ATCP 20-54; Agricultural Resource Management

ch. ATCP 22

Hemp and affecting small businesses

EmR1210

Expires: **The date on which the permanent rules take effect, as provided in 2011 Wisconsin Act 169, section 21.**

Department of Natural Resources (NR)

Chs. NR 1-99; Fish, Game and Enforcement, Forestry and Recreation

ch. NR 10

ch. NR 12

ch. NR 19

The wolf hunting and trapping season and regulations and a depredation program.

Statements of Scope

SS 025-23

Department of Transportation (Trans)

ch. Trans 309

Ambulance inspection standards

SS 026-23

Department of Natural Resources (NR)

Chs. NR 1-99; Fish, Game and Enforcement, Forestry and Recreation

ch. NR 20

Minocqua Chain walleye harvest regulations

SS 027-23

Office of the Commissioner of Insurance (Ins)

ch. Ins 3

The inclusion of “veterans” as a category of “eligible risks” under Ins 3.15(4)(a).

SS 028-23

Examining Board of Architects, Landscape Architects, Professional Engineers, Designers, Professional Land Surveyors, and Registered Interior Designers (A-E)

ch. A-E 1

ch. A-E 2

ch. A-E 3

ch. A-E 4

ch. A-E 5

ch. A-E 6

ch. A-E 7

ch. A-E 8

ch. A-E 9

ch. A-E 10

ch. A-E 11

ch. A-E 12

ch. A-E 13

ch. A-E 14

ch. A-E 15

Registered interior designers

Notices of Submittal of Proposed Rules to Legislative Council Clearinghouse

CR 23-017

Department of Natural Resources (NR)

Chs. NR 400-499; Environmental Protection – Air Pollution Control

ch. NR 400

ch. NR 428

ch. NR 484

Revisions to nitrogen compound emissions regulations in ch. NR 428

CR 23-018

Controlled Substances Board (CSB)

ch. CSB 2

Scheduling thirty-eight (38) anabolic steroids

CR 23-019

Controlled Substances Board (CSB)

ch. CSB 2

Scheduling Daridorexant

CR 23-020

Controlled Substances Board (CSB)

ch. CSB 2

Scheduling seven (7) synthetic benzimidazole-opioid substances

CR 23-021

Controlled Substances Board (CSB)

ch. CSB 2

Scheduling Ganaxolone

Rule-Making Notices (Hearing Notices)

CR 23-017

Department of Natural Resources (NR)

Chs. NR 400-499; Environmental Protection – Air Pollution Control

ch. NR 400

ch. NR 428

ch. NR 484

Revisions to nitrogen compound emissions regulations in ch. NR 428

Notices of Submittal of Rules to Legislature in Final Draft Form

CR 22-067

Medical Examining Board (Med)

ch. Med 13

Continuing education

CR 22-085

Cosmetology Examining Board (Cos)

ch. Cos 2

ch. Cos 5

Scope of practice, mobile establishments, and distance learning

CR 23-006

Department of Safety and Professional Services (SPS)

Chs. SPS 301-399 ; Safety, Buildings, and Environment

Chs. SPS 301-319; General, Part I

Chs. SPS 380-387; Plumbing

ch. SPS 302

ch. SPS 305

ch. SPS 381

ch. SPS 382

ch. SPS 384

Plumbing and plumbing products and affecting small busines

Final Permanent Rules Filed with LRB for Administrative Code Publication

CR 22-084

Department of Children and Families (DCF)

Chs. DCF 021-99; Safety and Permanence

ch. DCF 61

Qualified residential treatment programs

Emergency Rules Filed with Legislative Reference Bureau

EmR2306

Department of Health Services (DHS)

Chs. DHS 1-19; Management and Technology and Strategic Finance

Chs. DHS 101-109; Medical Assistance

ch. DHS 10

ch. DHS 101

ch. DHS 105

ch. DHS 106

ch. DHS 107

Electronic visit verification requirements for certain Medical Assistance services

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