CR 89-114

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Carroll D. Besadny, Secretary
Box 7921
Madison, Wisconsin 53707
TELEFAX NO. 608-267-3579
TDD NO. 608-267-6897

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STATE OF WISCONSIN)
)
DEPARTMENT OF NATURAL RESOURCES)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Bruce B. Braun, Deputy Secretary of the Department of Natural Resources and custodian of the official records of said Department, do hereby certify that the annexed copy of Natural Resources Board Order No. AM-49-89 was duly approved and adopted by this Department on January 25, 1990. I further certify that said copy has been compared by me with the original on file in this Department and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department at the Natural Resources Building in the City of Madison, this 14th day of March, 1990.

Bruce B. Braun, Deputy Secretary

(SEAL)

7-1-90

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

IN THE MATTER of repealing NR 440.02(13) and (24), 440.13(5)(c), 440.20(8)(a)7., 440.28(5)(title), (a) and (b), 440.36(6)(b), 440.44(5)(d), 440.445(5)(e) and (7)(d), 440.50(2)(o), 440.60(6)(e), 440.61(8)(c), 440.62(8)(f), 440.63(6)(d), 440.65(6)(d), 440.67(5)(c), 440.68(4) and 440.69(5)(e), renumbering NR 439.075(1)(b)3.a.16) and 17), 440.02(4), 440.08(5)(e), 440.17(2)(e), 440.28(5)(c), 440.50(1), 440.60, 440.61, 440.62(4)(b)1.b. to f., 440.64(2)(d) and 440.67(2)(a)1. to 18., renumbering and amending NR 440.31(2)(c), 440.60(2)(intro.), (g) and (h), (3)(a)(intro.), 1. and (b), and (4)(a), 440.61(2)(a)(intro.) and (b)(intro.), (5)(b)1. and (c)1. and (6)(g), 440.62(4)(b)1.f. and g. and 440.67(2)(a)(intro.), amending NR 439.075(1)(b)3.a.23) and c.6), 440.02(intro.), (1), (5), (11), and (35), 440.03(1) and (2), 440.04(1) to (5) and Notes, 440.08(2), 440.10(1), 440.11(2), 440.13(1), (4)(b), (5)(a) and (b) and (8), 440.17(title), (1), (2)(intro.), (a)1., 3., 7. to 10., 13., 20., 22. and 24. to 28., (b)1. and (c)(intro.), 440.19(1)(b), (2)(intro.), (5)(a)1. and 2., (6)(c)1. and (f)5.a. and (7)(a)1. to 5., (b), (c) and (f)3., 440.20(2)(intro.), (7)(h)1., 2. and 3. and (i)1. and (8)(a)1. to 6., 440.21(2)(intro.), 440.22(2)(intro.), 440.23(2)(intro.), (4)(e) and (5)(b), 440.24(2)(intro.) and (3)(a), 440.25(1)(a), (2)(intro.) and (a) and (3)(a)1., 440.26(2)(intro.), (3)(a)1., (6)(a)2., (7)(a)1.a. and 2. and (d)(intro.) and 2., 440.27(title) and (2)(intro.) and (i), 440.28(title), (2)(intro.) and (h) and (4)(a)1.a.(intro.), 440.29(2)(intro.), 440.30(2)(intro.), 440.31 (title), (2)(intro.) and (a), (3)(a)(intro.), (4)(b)2. and (c) and (5)(b), 440.32(2), 440.33(2)(intro.) and (6)(d)2., 440.34(2)(intro.), 440.35(2)(intro.), 440.36(2)(intro.), (3)(a)3. and (6)(a), 440.37(2)(intro.), 440.38(2)(intro.), 440.39(2)(intro.), 440.40(2)(intro.), 440.41(2)(intro.), 440.42(2)(intro.), 440.43(2)(intro.), 440.44(2)(intro.), (4)(c) and (5)(c), 440.445(2)(intro.), (3)(b), (4)(b) and (c), 440.45(1)(a) and (b), (2)(intro.) and (c), (3)(a)2., (4)(a)1.(intro.), d., e. and f., 2., 4. and 5., (5)(a)2.(intro.), (b)1., (d)(intro.), 3.(intro.) and b. and (6)(d)1., 440.46(2)(intro.), (3)(a)1. and 2. and Table CC-11 and (4)(b)(intro.), 1. and 3., 440.47(2)(intro.) and (3)(b)1. and (d)3., 440.48(2)(a)(intro.) and (b)(intro.), 440.50(2)(intro.), (3)(a)3. and (6)(a)1.b. and (b)2.a.,

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440.51(2)(intro.), (4)(b) and (5)(c), 440.52(2)(intro.), 440.53(2)(title), (a)(intro.) and (b)(intro.), (4)(c)1.a.3)(intro.) and (7)(a)1. and 2., 440.54(2)(intro.) and (3)(a)1.a., 440.55(2)(intro.), 440.56(2)(a)(intro.), 440.57(2)(title), (a)(intro.) and (b)(intro.), 440.58(2)(title), (a)(intro.) and (b)(intro.) and (4)(c)2.a.2), 440.59(2)(intro.), (3)(a)1.a. and b. and (5)(k), 440.62(1)(c), (2)(intro.) and (a)1.c., (3)(a)3., (b)4.a.2) and (c)3., (4)(a)2.(intro.), a., 4., (6)(b)(intro.), (d)1., (e)1. and (g)5. and (9)(a), 440.63(2)(title), (a)(intro.) and (b)(intro.), (3)(intro.), (4)(b)2.a.1) and (7)(a)1., 440.64(2)(intro.), (3)(i) and (7)(a), 440.65(2)(a)(intro.) and (b)(intro.), 440.66(1)(c), (2)(intro.), (3)(c) and (4)(b)2. and (d), 440.67(3)(a), 440.68(2)(intro.) and 440.69(2)(intro.) and (4)(b), repealing and recreating NR 440.11(5), 440.13(3), 440.31(2)(b), 440.45(6)(d)3., 440.62(3)(j)4. and (5), and creating NR 440.07(1)(f) and (g), 440.17(2)(a)34. to 55., (e) and (h), 440.18, 440.205, 440.28(4)(a)1.a.4) and 5) and (5)(title) and (a) to (d), 440.285, 440.31(2)(c) and (3)(b) and (c), 440.315, 440.445(5)(d) Note, 440.45(5)(c)4., 440.48(1)(c), 440.50(1)(b), 440.51(5)(title), 440.53(2)(a)6e., 6g., 6k. and 6p., 440.62(4)(b)1.b., 440.642, 440.644, 440.68(3)(c) Note, 440.682, 440.684, 440.688 and 440.72 of the Wisconsin Administrative Code, pertaining to incorporation of federal New Source Performance Standards.

Analysis Prepared by the Department of Natural Resources

Authorizing statutes: ss. 144.31(1)(a), 144.375(4), 144.38 and 227.11(2)(a), Stats.

Statutes interpreted: ss. 144.31(1)(f) and 144.38, Stats.

Under section 111 of the federal Clean Air Act, the Administrator of the United States Environmental Protection Agency (U.S. EPA) is required to adopt regulations establishing federal standards of performance for new sources (NSPS). NSPS are adopted for categories of stationary air pollution sources which cause or contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare.

As of July 1, 1988, NSPS have been adopted for 60 source categories as set out in Title 40 of the Code of Federal Regulations, Part 60. Under section 111(c)(1) of the federal Clean Air Act, states may develop and submit to U.S. EPA procedures for implementing and enforcing the NSPS. If U.S. EPA finds the state procedures to be adequate, it may delegate to the state the authority to implement and enforce the standards. Wisconsin has received this delegation of authority.

Section 144.375(4)(a), Stats., states that if an NSPS is promulgated by U.S. EPA, the Department shall promulgate by rule a similar standard which may not be more restrictive in terms of emission limitations than the federal standard. The Department's last NSPS update, which took effect on October 1, 1986, adopted the federal NSPS which had been promulgated by U.S. EPA through March of 1985. The rules contained in this order adopt the changes to the federal NSPS occurring between March, 1985 and July, 1988. These include modifications to existing standards and the adoption of standards for new categories of sources. In accordance with section 227.14(1m), Stats., the format for these rules is based on the format used in 40 C.F.R. Part 60, the federal NSPS.

The rules contained in this order are proposed to comply with section 144.375(4)(a), Stats., and to enable U.S. EPA to continue delegation to the state of its authority to implement and enforce the present NSPS.

This order also includes numerous minor changes in language to correct errors, improve clarity, and improve consistency within ch. NR 440, with the other chapters of the NR 400 series and with rule format and style guidelines provided by the Revisor of Statutes. Consistent with a department policy of specifying all numerical emission limits to at least 2 significant figures, final zeroes are added to a number of emission limits which contain only one significant figure in the Code of Federal Regulations. Minor corrections are also made to a section of ch. NR 439 which cites renumbered sections in ch. NR 440.

SECTION 1. NR 439.075(1)(b)3.a.16) and 17) are renumbered 17) and 16).

SECTION 2. NR 439.075(1)(b)3.a.23) and c.6) are amended to read:

NR 439.075(1)(b)3.a.23) Control devices at metallic mineral processing plants with sources subject to the requirements of s. NR ~~440.60~~ 440.525.

c.6) Control devices at facilities subject to the pressure sensitive tape and label surface coating requirements of s. NR ~~440.61~~ 440.565.

SECTION 3. NR 440.02(intro.) and (1) are amended to read:

NR 440.02 (intro.) In addition to the definitions in this section, the definitions contained in ch. NR 400 apply to the terms used in this chapter~~:~~.

(1) ~~"Act or 'Federal clean air act'"~~ "Act" or "federal clean air act" has the meaning given it in s. 144.30(14), Stats.

SECTION 4. NR 440.02(4) is renumbered 400.02(4m)

SECTION 5. NR 440.02(5) and (11) are amended to read:

NR 440.02(5) "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~~ administrator's satisfaction to

produce, in specific cases, results adequate for ~~its~~ his or her determination of compliance.

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

SECTION 6. NR 440.02(13) and (24) are repealed.

SECTION 7. NR 440.02(35) is amended to read:

NR 440.02(35) ~~"'Volatile organic compound' or 'VOC'"~~ "Volatile organic compound" or "VOC" means any organic compound which participates in atmospheric photochemical reactions, or which is measured by a reference method, an equivalent method, an alternative method, or which is determined by procedures specified under any section of this chapter.

SECTION 8. NR 440.03(1) and (2) are amended to read:

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

A - ampere
g - gram
Hz - hertz
J - joule
K - degree Kelvin
kg - kilogram
m - meter
m^3 - cubic meter
mg - milligram--10^{-3} gram
mm - millimeter--10^{-3} meter
Mg - megagram--10^6 gram
MJ - megajoule--10^6 joule
mol - mole
N - newton
ng - nanogram--10^{-9} gram
nm - nanometer--10^{-9} meter
Pa - pascal
s - second

V - volt

W - watt

~~Ω - ohm~~

~~ug - microgram - 10^{-6} gram~~

(2) Other units of measure:

Btu - British thermal unit

°C - degree Celsius ~~(centrigrade)~~ (centigrade)

cal - calorie

cfm - cubic feet per minute

cu ft - cubic feet

dcf - dry cubic feet

dcm - dry cubic meter

dscf - dry cubic feet at standard conditions

dscm - dry cubic meter at standard conditions

eq - equivalent

°F - degree Fahrenheit

ft - feet

gal - gallon

gr - grain

~~g-eq - gram equivalent~~

hr - hour

in or " - inch

k - 1,000

l - liter

lpm - liter per minute

lb - pound

~~meq - milliequivalent~~

min - minute

ml - milliliter

mol. wt. - molecular weight

ppb - parts per billion (by volume)

ppm or ppmv - parts per million (by volume)

psia - pounds per square inch absolute

psig - pounds per square inch gauge

°R - degree Rankine

scf - cubic feet at standard conditions

scfh - cubic feet per hour at standard conditions
scm - cubic meter at standard conditions
sec - second
sq ft - square feet
std - at standard conditions

SECTION 9. NR 440.04(1) to (5) and Notes are amended to read:

(1) DNR Southern District, 3911 Fish Hatchery Rd., ~~Madison~~ Fitchburg, WI 53711.

(2) DNR Lake Michigan District, 1125 N. Military Ave., P.O. Box ~~3600~~ 10448, Green Bay, WI ~~54303~~ 54307-0448.

(3) DNR ~~West Central~~ Western District, 1300 Clairemont Ave., Call Box 4001, Eau Claire, WI ~~54701~~ 54702.

(4) DNR Southeast District, Air Management Section, ~~1011 N. Mayfair Rd., Box 13248~~ 2300 N. Dr. Martin Luther King, Jr. Drive, Box 12436, Milwaukee, WI ~~53213~~ 53212.

~~Note: The Southeast District offices have moved to 2300 N. 3rd Street, Box 12436, Milwaukee, WI 53212.~~

(5) DNR North Central District, ~~Schick Plaza~~ 107 Sutcliff Ave., P.O. Box 818, Rhinelander, WI 54501.

Note: The counties in each administrative district are:

(1) Southern District--Columbia, Dane, Dodge, Fond du Lac, Grant, Green, Green Lake, Iowa, Jefferson, LaFayette, Marquette, Richland, Rock and Sauk Counties

(2) Lake Michigan District--Brown, Calumet, Door, Florence, Kewaunee, Manitowoc, Marinette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara and Winnebago Counties

(3) ~~West Central~~ Western District--Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, La Crosse, Monroe, Pepin, Pierce, St. Croix, Trempealeau and Vernon Counties

(4) Southeast District--Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington and Waukesha Counties

(5) North Central District--Adams, Forest, Juneau, Langlade, Lincoln, Marathon, Oneida, Portage, Vilas and Wood Counties

(6) Northwest District--Ashland, Barron, Bayfield, Burnett, Douglas, Iron, Polk, Price, Rusk, Sawyer, Taylor and Washburn Counties

SECTION 10. NR 440.07(1)(f) and (g) are created to read:

NR 440.07(1)(f) A notification of the anticipated date for conducting the opacity observations required by s. NR 440.11(5)(a). The notification shall also include, if appropriate, a request for the department to provide a visible emissions reader during a performance test. The notification shall be

postmarked not less than 30 days prior to the anticipated opacity observation date.

(g) A notification that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required by s. NR 440.08, in lieu of Method 9 in 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, observation data, as allowed by s. NR 440.11(5)(f). This notification shall be postmarked not less than 30 days prior to the date of the performance test.

SECTION 11. NR 440.08(2) is amended to read:

NR 440.08(2) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable section of this chapter unless the department~~: (a) Specifies~~ specifies or approves, in specific cases, the use of a reference method with minor changes in methodology~~,~~ or waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the department's satisfaction that the affected facility is in compliance with the standard, or unless the administrator:

~~(b)~~(a) Approves the use of an equivalent method, or

~~(c)~~(b) Approves the use of an alternative method the results of which ~~it~~ the administrator has determined to be adequate for indicating whether a specific source is in compliance~~, or~~

~~(d) Waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the department's satisfaction that the affected facility is in compliance with the standard~~.

SECTION 12. NR 440.08(5)(e) is renumbered NR 440.08(6).

SECTION 13. NR 440.10(1) is amended to read:

NR 440.10(1) Exemption or the granting of an exemption from any requirement of this chapter does not relieve any person from compliance with ch. NR 101, with other requirements of chs. NR 400 to 499 or ~~from~~ with ss. 144.30 to 144.426 or 144.96, Stats.

SECTION 14. NR 440.11(2) is amended to read:

NR 440.11(2) Compliance with opacity standards in this chapter shall be determined by conducting observations in accordance with Reference Method 9 in 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, ~~or~~ with any alternative method that is approved by the ~~department. Opacity readings of portions of plumes which contain condensed, uncombined water vapor may not be used for purposes of determining compliance with opacity standards. The results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the owner or operator of the source shall meet the burden of proving that the instrument used meets, at the time of the alleged violation, Performance Specification 1 in 40 C.F.R. pt. 60, Appendix B, incorporated by reference in s. NR 440.17, has been properly maintained and (at the time of the alleged violation) calibrated, and that the resulting data have not been tampered with in any way~~ administrator, or as provided in sub. (5)(e). For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test or other set of observations (meaning those fugitive-type emission sources subject only to an opacity standard).

SECTION 15. NR 440.11(5) is repealed and recreated to read:

NR 440.11(5)(a) For the purpose of demonstrating initial compliance, opacity observations shall be conducted concurrently with the initial performance test required in s. NR 440.08, unless one of the following conditions apply:

1. If no performance test under s. NR 440.08 is required, then opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup of the facility.

2. If visibility or other conditions prevent the opacity observations from being conducted concurrently with the initial performance test required under s. NR 440.08, the owner or operator of an affected facility shall reschedule the opacity observations as soon after the initial performance test as possible, but not later than 30 days thereafter, and shall advise the department of the rescheduled date.

(b) When the conditions specified in par. (a)1. or 2. are met, the 30-day prior notification to the department required in s. NR 440.07(1)(f) shall be waived. A rescheduled opacity observation shall be conducted, to the extent possible, under the same operating conditions that existed during the initial performance test conducted under s. NR 440.08. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity observations from being made concurrently with the initial performance test in accordance with procedures contained in Reference Method 9 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17. Opacity readings of portions of plumes which contain condensed, uncombined water vapor may not be used for purposes of determining compliance with opacity standards. The owner or operator of an affected facility shall make available, upon request by the department, such records as may be necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible emissions observer certification. Except as provided in par. (f), the results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the owner or operator shall meet the burden of proving that the instrument used meets, at the time of the alleged violation indicated by visual observation, Performance Specification 1 in Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, has been properly maintained and that the resulting data collected at the time of the alleged violation have not been altered in any way.

(c) Except as provided in par. (d), the owner or operator of an affected facility to which an opacity standard in this chapter applies shall conduct opacity observations in accordance with sub. (2), shall record the opacity of emissions, and shall report to the department the opacity results along with the results of the initial performance test required under s. NR 440.08. The inability of an owner or operator to secure a visible emissions observer may not be considered a reason for not conducting the opacity observations concurrently with the initial performance test.

(d) The owner or operator of an affected facility to which an opacity standard in this chapter applies may request the department to determine and to record the opacity of emissions from the affected facility during the initial performance test and at such times as may be required. The owner or operator of

the affected facility shall report the opacity results to the department. Any request to the department to determine and to record the opacity of emissions from an affected facility shall be included in the notification required in s. NR 440.07(1)(f). If the department cannot determine and record the opacity of emissions from the affected facility during the performance test, then the provisions of pars. (a) and (b) shall apply.

(e) An owner or operator of an affected facility using a continuous opacity monitor (transmissometer) shall record the monitoring data produced during the initial performance test required by s. NR 440.08 and shall furnish the department a written report of the monitoring results along with the results obtained using Method 9 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, and s. NR 440.08 performance test results.

(f) An owner or operator of an affected facility subject to an opacity standard may submit, for compliance purposes, continuous opacity monitoring system (COMS) data results produced during any performance test required under s. NR 440.08 in lieu of Method 9 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, observation data. If an owner or operator elects to submit COMS data for compliance with the opacity standard, he or she shall notify the department of that decision, in writing, at least 30 days before any performance test required under s. NR 440.08 is conducted. Once the owner or operator of an affected facility has notified the department to that effect, the department shall use the COMS data results to determine opacity compliance during subsequent tests required under s. NR 440.08, until the owner or operator notifies the department, in writing, to the contrary. For the purpose of determining compliance with the opacity standard during a performance test required under s. NR 440.08 using COMS data, the minimum total time of COMS data collection shall be sufficient to include the averages of all 6-minute continuous periods within the duration of the mass emission performance test. Results of the COMS opacity determinations shall be submitted along with the results of the performance test required under s. NR 440.08. The owner or operator of an affected facility using a COMS for compliance purposes is responsible for demonstrating that the COMS meets the requirements specified in s. NR 440.13(3), that the COMS has been properly maintained and operated, and that the resulting data have not been altered in any way. If COMS data results are submitted for compliance with the opacity standard for a period of time during which Method 9 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference

in s. NR 440.17, data indicates noncompliance, the Method 9 data shall be used to determine opacity compliance.

(g) Upon receipt from an owner or operator of the written reports of the results of the performance tests required by s. NR 440.08, the opacity observation results and observer certification required by sub. (5)(b), and the COMS results, if applicable, the department shall make a finding concerning compliance with opacity and other applicable standards. If COMS data results are used to comply with an opacity standard, only those results are required to be submitted along with the performance test results required by s. NR 440.08. If the department finds that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with s. NR 440.08, but during the time such performance tests are being conducted fails to meet any applicable opacity standard, the department shall notify the owner or operator and advise him or her that he or she may petition the administrator within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.

Note: Under 40 C.F.R. s. 60.11(e)(7) and (8), the administrator will grant a petition for adjustment of the opacity standard for an affected facility upon a demonstration by the owner or operator that the facility and associated air pollution control equipment were operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the department; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard. The administrator will establish an opacity standard for the affected facility at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity standard at all times during which the source is meeting the applicable mass or concentration emission standard. The administrator will promulgate the new opacity standard in the federal register.

SECTION 16. NR 440.13(1) is amended to read:

NR 440.13(1) For the purposes of this section, all continuous monitoring systems required under applicable sections of this chapter shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring systems under 40 C.F.R. pt. 60, Appendix B, incorporated by reference in s. NR 440.17, unless otherwise specified in an applicable section or by the department. <u>If the continuous monitoring system is used to determine compliance with emission limits on a continuous basis, the quality assurance requirements of 40 C.F.R. pt. 60, Appendix F, incorporated by reference in s. NR 440.17, apply unless an applicable section or the department specify otherwise.</u>

SECTION 17. NR 440.13(3) is repealed and recreated to read:

NR 440.13(3) If the owner or operator of an affected facility elects to submit continuous opacity monitoring system (COMS) data for compliance with the opacity standard as provided under s. NR 440.11(5)(f), the owner or operator shall conduct a performance evaluation of the COMS as specified in Performance Specification 1, Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, before the performance test required under s. NR 440.08 is conducted. Otherwise, the owner or operator of an affected facility shall conduct a performance evaluation of the COMS or continuous emission monitoring system (CEMS) during any performance test required under s. NR 440.08 or within 30 days thereafter in accordance with the applicable performance specification in Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17. The owner or operator of an affected facility shall conduct COMS or CEMS performance evaluations at such other times as may be required by the department.

(a) The owner or operator of an affected facility using a COMS to determine opacity compliance during any performance test required under s. NR 440.08 and as described in s. NR 440.11(5)(f) shall furnish the department 2 or, upon request, more copies of a written report of the results of the COMS performance evaluation described in sub. (3)(intro.) at least 10 days before the performance test required under s. NR 440.08 is conducted.

(b) Except as provided in par. (a), the owner or operator of an affected facility shall furnish the department within 60 days of completion 2 or, upon request, more copies of a written report of the results of the performance evaluation.

SECTION 18. NR 440.13(4)(b) and (5)(a) and (b) are amended to read:

NR 440.13(4)(b) Unless otherwise approved by the department, the following procedures shall be followed for continuous monitoring systems measuring opacity of emissions. Minimum procedures shall include a method for producing a simulated zero ~~(or no greater than 10%)~~ opacity condition and an upscale (span ~~value~~) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(5)(a) All continuous monitoring systems referenced by sub. (3)~~(a) and (b)~~ for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(b) All continuous monitoring systems referenced by sub. (3)~~(a)~~ for measuring ~~oxides of nitrogen, sulfur dioxide, carbon dioxide or oxygen~~ emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period.

SECTION 19. NR 440.13(5)(c) is repealed.

SECTION 20. NR 440.13(8) is amended to read:

NR 440.13(8) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to 6-minute averages and for continuous monitoring systems other than opacity to one-hour averages for time periods as defined under s. NR 440.02(29) and (20), respectively. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period. For continuous monitoring systems other than opacity, one-hour averages shall be computed from 4 or more data points equally spaced over each one-hour period. Data recorded during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments ~~shall~~ may not be included in the data averages computed under this subsection. An arithmetic or integrated average of all data may be used. The data may be recorded in reduced or nonreduced form (e.g. ppm pollutant and percent O_2 or ng/J of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in the standards. After conversion into units of the standard, the data may be rounded to the same number of significant digits used in the standard to specify the emission limit (e.g., rounded to the nearest one percent opacity).

SECTION 21. NR 440.17 (title) is amended to read:

NR 440.17 (title) INCORPORATION BY REFERENCE OF CODE OF FEDERAL REGULATIONS PROVISIONS AND OTHER MATERIALS.

SECTION 22. NR 440.17(1) is amended to read:

NR 440.17(1) (title) CODE OF FEDERAL REGULATIONS. (a) (title) FEDERAL REGULATIONS. The federal regulations in effect on July 1, 1988 listed in this paragraph are incorporated by reference in the corresponding sections noted. Copies of these regulations are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin, or may be purchased for personal use from the superintendent of documents, U.S. government printing office, Washington, D.C. 20402.

1. 40 C.F.R. s. 51.18 for s. NR 440.205(2)(1).

2. 40 C.F.R. s. 51.24 for s. NR 440.205(2)(1).

3. 40 C.F.R. s. 52.21 for s. NR 440.205(2)(1).

4. 40 C.F.R. s. 60.11(e) for s. NR 440.59(5)(k).

5. 40 C.F.R. s. 60.484 for ss. NR 440.62(3)(a)3. and (6)(b)(intro.) and 440.66(3)(c).

6. 40 C.F.R. s. 60.592(c) for s. NR 440.66(3)(c).

7. 40 C.F.R. pt. 261 for s. NR 440.205(5)(q).

8. 40 C.F.R. pt. 761 for s. NR 440.205(5)(q).

(b) (title) APPENDICES. Appendices A, B, ~~and~~ C and F of 40 C.F.R. pt. 60 as in effect on ~~June 30, 1983~~ July 1, 1988 are incorporated by reference and made a part of this chapter. Copies of these Appendices are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin, or may be purchased for personal use from the superintendent of documents, U.S. government printing office, Washington, D.C. 20402.

SECTION 23. NR 440.17(2)(intro.) and (a)1., 3., 7. to 10., 13., 20., 22. and 24. to 28. are amended to read:

NR 440.17(2)(intro.) OTHER MATERIALS. The materials listed in this subsection are incorporated by reference in the corresponding sections noted. Some of the materials are also incorporated in Appendices A, B, ~~and~~ C and F of 40 C.F.R. pt. 60 as in effect on ~~June 30, 1983~~ July 1, 1988 by the administrator. Since these Appendices are incorporated by reference in this chapter by sub. (1), materials incorporated by reference in the Appendices are hereby also incorporated by reference and made a part of this chapter. The materials are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin or may be purchased for personal use at the corresponding address

noted.

(a)1. ASTM D388-77, Standard Specification for Classification of Coals by Rank, for ss. NR 440.19(2)(a)~~,~~ and (6)(f)4.a., b. and f., 440.20(2)(b), ~~(m)~~ (n) and ~~(x)~~ (y), 440.205(2)(d) and (t) and 440.42(2)(a) and (b).

3. ASTM D3176-74, Standard Method for Ultimate Analysis of Coal and Coke, for s. NR 440.19(6)(f)5.a. and for 40 C.F.R. pt. 60, Appendix A, Method 19.

7. ASTM D2015-77, Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, for s. NR 440.19(6)(f)5.b. and (7)(g) and for 40 C.F.R. pt. 60, Appendix A, Method 19~~, par. 5.2.2~~.

8. ASTM D1826-77, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, for s. NR 440.19(6)(f)5.b. and (7)(g), and for 40 C.F.R. pt. 60, Appendix A, Method 19~~, par. 5.2.2~~.

9. ASTM D240-76, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, for ss. NR 440.19(7)(g) and 440.46(7)(f), and for 40 C.F.R. pt. 60, Appendix A, Method 19~~, pars. 2.2.3. and 5.2.2~~.

10. ASTM D396-78, Standard Specifications for Fuel Oils, for ss. NR 440.205(2)(h) and (zf), 440.27(2)(g) and 440.28(2)(f).

13. ASTM ~~D323-72, (Reapproved 1977), Standard~~ D323-82, Test Method for Vapor Pressure of Petroleum Products (Reid Method), for ss. NR 440.27(2)(i) ~~and~~ , 440.28(2)(h) and 440.285(2)(i) and (7)(f)2.b.

20. ASTM ~~D1072-56 (Reapproved 1975)~~ D1072-80, Standard ~~Test~~ Method for Total Sulfur in Fuel Gases, for s. NR 440.50(6)(b)2.

22. ASTM D1193-77, Standard Specification for Reagent Water, for 40 C.F.R. pt. 60, Appendix A, Method 6, par. 3.1.1.~~,~~; Method 7, par. 3.2.2.~~,~~; Method 7A, par. 3.2; Method 7C, par. 3.1.1; Method 7D, par. 3.1.1; Method 8, par. 3.1.3~~,~~; Method 11, par. 6.1.3; ~~and~~ Method 12, par. 4.1.3 and Method 13A, par. 6.1.2.

24. ASTM D2234-76, Standard Methods for Collection of a Gross Sample of Coal, for 40 C.F.R. pt. 60, Appendix A, Method 19~~, par. 2.1.1~~.

25. ASTM D3173-73, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, for 40 C.F.R. pt. 60, Appendix A, Method 19~~, par. 2.1.3~~.

26. ASTM D3177-75, Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke, for 40 C.F.R. pt. 60, Appendix A, Method 19~~, par. 2.1.3~~.

27. ASTM D2013-72, Standard Method for Preparing Coal Samples for Analysis, for 40 C.F.R. pt. 60, Appendix A, Method 19~~, par. 2.1.3~~.

28. ASTM D270-65 (~~Reapproved~~ reapproved 1975), Standard Method of Sampling Petroleum and Petroleum Products, for 40 C.F.R. pt. 60, Appendix A, Method 19~~, par. 2.2.1~~.

SECTION 24. NR 440.17(2)(a)34. to 55. are created to read:

NR 440.17(2)(a)34. ASTM E169-63 (reapproved 1977), General Techniques of Ultraviolet Quantitative Analysis, for ss. NR 440.62(6)(d), 440.66(4)(b) and 440.682(3)(f).

35. ASTM E168-67 (reapproved 1977), General Techniques of Infrared Quantitative Analysis, for ss. NR 440.62(6)(d), 440.66(4)(b) and 440.682(3)(f).

36. ASTM E260-73, General Gas Chromatography Procedures, for ss. NR 440.62(6)(d), 440.66(4)(b), 440.682(3)(f) and 440.684(6)(a)8.

37. ASTM D2879-83, Test Method for Vapor Pressure - Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, for ss. NR 440.285(2)(f)3., (7)(e)3.b. and (f)2.a. and 440.62(6)(e).

38. ASTM D2382-76 (reapproved 1980), Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), for ss. NR 440.18(6) and 440.62(6)(g).

39. ASTM D2504-67 (reapproved 1977), Noncondensable Gases in C_3 and Lighter Hydrocarbon Products by Gas Chromatography, for s. NR 440.62(6)(g).

40. ASTM D86-78, Distillation of Petroleum Products, for ss. NR 440.66(4)(d) and 440.682(4)(h).

42. ASTM D3031-81, Standard Test Method for Total Sulfur in Natural Gas by Hydrogenation, for s. NR 440.50(6)(b)2.

43. ASTM D4084-82, Standard Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), for s. NR 440.50(6)(b)2.

44. ASTM D3246-81, Standard Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, for s. NR 440.50(6)(b)2.

45. ASTM D2584-68 (reapproved 1985), Standard Test Method for Ignition Loss of Cured Reinforced Resins, for s. NR 440.69(6)(e).

46. ASTM D1946-77, Method for Analysis of Reformed Gas by Gas Chromatography, for s. NR 440.18(6).

47. ASTM D3431-80 (reapproved 1987), Standard Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons (Microcoulometric Method), for s. NR 440.205(10)(e)3.

48. ASTM D129-64 (reapproved 1978), Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), for 40 C.F.R. pt. 60, Appendix A, Method 19.

49. ASTM D1552-83, Standard Test Method for Sulfur in Petroleum Products (High Temperature Method), for 40 C.F.R. pt. 60, Appendix A, Method 19.

50. ASTM D1835-86, Standard Specification for Liquified Petroleum (LP) Gases, to be approved for s. NR 440.205(2)(y).

51. ASTM D3286-85, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isothermal – Jacket Bomb Calorimeter, for 40 C.F.R. pt. 60, Appendix A, Method 19.

52. ASTM D4057-81, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, for 40 C.F.R. pt. 60, Appendix A, Method 19.

53. ASTM D4239-85, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, for 40 C.F.R. pt. 60, Appendix A, Method 19.

54. ASTM D2016-74 (reapproved 1983), Standard Test Methods for Moisture Content of Wood, for 40 C.F.R. pt. 60, Appendix A, Method 28.

55. ASTM D4442-84, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, for 40 C.F.R. pt. 60, Appendix A, Method 28.

SECTION 25. NR 440.17(2)(b)1. and (c)(intro.) are amended to read:

NR 440.17(2)(b)1. AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, for ss. NR 440.37(5)(d)2., ~~440.28~~ 440.38(5)(d)2., 440.39(5)(d)2., 440.40(5)(d)2., and 440.41(5)(f)2.

(c)(intro.) The following material is available for purchase from the American Petroleum Institute, ~~2101~~ 1220 L Street, N.W., Washington, DC ~~20037~~ 20005.

SECTION 26. NR 440.17(2)(e) is renumbered (g).

SECTION 27. NR 440.17(2)(e) and (h) are created to read:

NR 440.17(2)(e) The following material is available for purchase from the Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue N.W., Washington, D.C. 20037.

1. Method 209A, Total Residue Dried at 103-105 °C, in Standard Methods for the Examination of Water and Wastewater, 15th edition, 1980, for s. NR 440.69(4)(b).

(h) The following material is available for purchase from the Industrial Press, 93 Worth St., New York, New York: Gas Engineers Handbook, 1st edition, 2nd printing, 1966, page 6/25, Fuel Gas Engineering Practice, for s. NR 440.684(9).

SECTION 28. NR 440.18 is created to read:

NR 440.18 GENERAL CONTROL DEVICE REQUIREMENTS. (1) INTRODUCTION. This section contains requirements for control devices used to comply with applicable sections of this chapter and chs. NR 445 to 484. The requirements are placed in this section for administrative convenience and only apply to facilities covered by sections or chapters referring to this section.

(2) FLARES. Subsections (3) through (6) apply to flares.

(3)(a) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in sub. (6), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(b) Flares shall be operated with a flame present at all times, as determined by the methods specified in sub. (6).

(c) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in sub. (6).

(d)1. Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in sub. (6)(d), less than 18.3m/sec (60 ft/sec), except as provided in subds. 2. and 3.

2. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in sub. (6)(d), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

3. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in sub. (6)(d), less than

the velocity, V_{max}, as determined by the method specified in sub. (6)(e), and less that 122 m/sec (400 ft/sec) are allowed.

(e) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in sub. (6)(f).

(f) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(4) Owners or operators of flares used to comply with the provisions of this section shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable sections below provide provisions stating how owners or operators of flares shall monitor these control devices.

(5) Flares used to comply with provisions of this section shall be operated at all times when emissions may be vented to them.

(6)(a) Reference Method 22 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, shall be used to determine the compliance of flares with the visible emission provisions of this section. The observation period is 2 hours and shall be used according to Method 22 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

(b) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(c) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 700 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

$$K = \text{Constant, } 1.740 \quad 10^{-7} \quad \left[\frac{1}{\text{ppm}}\right] \left[\frac{\text{g-mole}}{\text{scm}}\right] \left[\frac{\text{MJ}}{\text{kcal}}\right]$$

where the standard temperature for (g-mole)/scm is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77, incorporated by reference in s. NR 440.17; and

H_i = Net heat of combustion of sample component i, kcal/(g-mole) at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76, incorporated by reference in s. NR 440.17, if published values are not available or cannot be calculated.

(d) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined as appropriate by Reference Method 2, 2A, 2C, or 2D of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, by the unobstructed (free) cross sectional area of the flare tip.

(e) The maximum permitted velocity, V_{max}, for flares complying with sub. (3)(d)3. shall be determined by the following equation:

$$\text{Log}_{10}\ (V_{max}) = (H_T + 28.8)/31.7$$

where:

V_{max} = Maximum permitted velocity, m/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in par. (c).

(f) The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation.

$$V_{max} = 8.706 + 0.7084(H_T)$$

where:

V_{max} = Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

H_T = The net heating value as determined in par. (c).

SECTION 29. NR 440.19(1)(b) is amended to read:

NR 440.19(1)(b) Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials other than fossil fuels as defined in this section ~~shall~~ does not bring that unit under the applicability of this section.

SECTION 30. NR 440.19(2)(intro.), (5)(a)1. and 2. are amended to read:

NR 440.19(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(5)(a)1. 86 nanograms per joule heat input (0.20 lb per million Btu) derived from gaseous fossil fuel ~~or gaseous fossil fuel and wood residue~~.

2. ~~130~~ 129 nanograms per joule heat input (0.30 lb per million Btu) derived from liquid fossil fuel, ~~or~~ liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue.

SECTION 31. NR 440.19(6)(c)1. and (f)5.a. are amended to read:

NR 440.19(6)(c)1. Methods 3 or 3A, 6, 6A, 6B, or 6C and 7, 7A, 7C, 7D or 7E of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, as applicable, shall be used for conducting ~~performance~~ relative accuracy evaluations of sulfur dioxide and nitrogen oxides continuous emission monitoring systems. Methods 3A, 6C and 7E shall be used only at the sole discretion of the source owner or operator.

(f)5.a. H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM method ~~D3178-74~~ D3178-73 or ~~D3176~~ D3176-74 (solid fuels), or computed from results using ASTM methods ~~D1137-53(75)~~ D1137-53(1975), ~~D1945-64(76)~~ D1945-64(1976), or D1946-77 (gaseous fuels) as applicable. These 5 ASTM methods are incorporated by reference in s. NR 440.17.

SECTION 32. NR 440.19(7)(a)1. to 5., (b) and (c) are amended to read:

NR 440.19(7)(a)1. Method 1 for selection of sampling site and sample traverses~~,~~.

2. Method 3 ~~or 3A~~ for gas analysis to be used when applying Reference ~~Methods~~ Method 5, 5B, 6, ~~or 6C, and~~ 7, 7A, 7C, 7D~~,~~ or ~~7E,~~ 17.

3. Method 5, 5B or 17 for concentration of particulate matter and the associated moisture content~~,~~ as follows: Method 5 is to be used at affected facilities without wet flue gas desulfurization (FGD) systems; Method 5B is to be used only after wet FGD systems; and Method 17 may be used at facilities with or without wet FGD systems provided that the stack gas temperature at the sampling location does not exceed an average temperature of 160°C (320°F). The

procedures of sections 2.1 and 2.3 of Method 5B may be used with Method 17 after wet FGD systems if the effluent gas is saturated or laden with water droplets.

4. Method 6 or 6C for concentration of SO_2. Method 6A may be used whenever Methods 6 or 6C and 3 or 3A data are used to determine the SO_2 emission rate in ng/J~~, and~~. Method 6C shall be used only at the sole discretion of the source owner or operator.

5. Method 7, 7A, 7C, 7D, or 7E for concentration of NO_x. Method 7E shall be used only at the sole discretion of the source owner or operator.

(b) For Method 5, 5B, or 17 of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables~~,~~ or other factors, may be approved by the department. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature ~~no greater than 433 K (320°F)~~ of 160°C ± 14°C (320°F ± 25°F).

(c) For Methods 6~~, or 6C,~~ and 7, 7A, 7C, or 7D~~, or 7E~~ of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, the sampling site shall be the same as that selected for Method 5, 5B, or 17. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). For ~~Method~~ Methods 6 and 7C or 7D, the samples shall be extracted at a ~~rate proportional to the gas velocity at the sampling point~~ constant volumetric flow rate.

SECTION 33. NR 440.19(7)(f)3. is amended to read:

NR 440.19(7)(f)3. Percent O_2 = Oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures of Method 3 of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, as applicable, or by using Method ~~3C~~ 3A. Method 3A shall be used only at the sole discretion of the source owner or operator. Oxygen samples shall be obtained as follows:

a. For determination of sulfur dioxide by Method 6 or 6C and nitrogen oxides emissions by Method 7, 7A, 7C, 7D, or 7E, the oxygen sample shall be obtained simultaneously at the same point in the duct. For Method 7 or 7A the oxygen sample shall be obtained using the grab sampling and analysis procedures

of Method 3 or ~~3C~~ by using Method 3A.

b. For determination of particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the same sampling location used for each run of Method 5, 5B or 17 under par. (b). Method 1 shall be used for selection of the number of oxygen traverse points except that no more than 12 sample points are required.

SECTION 34. NR 440.20(2)(intro.), (7)(h)1., 2. and 3. and (i)1. are amended to read:

NR 440.20(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(7)(h)1. Reference Methods 3 or 3A, 6 or 6C and 7, 7A, 7C, 7D, or 7E, as applicable, shall be used. Method 6A or 6B may be used whenever Methods 6 ~~or 6C~~ and 3 ~~or 3A~~ data are required to determine the SO_2 emission rate in ng/J. Methods 3A, 6C and 7E shall be used only at the sole discretion of the source owner or operator. The sampling location or locations shall be the same as those specified for the continuous emission monitoring system.

2. For Method 6 or 6A, the minimum sampling time shall be 20 minutes and the minimum sampling volume shall be 0.02 dscm (0.71 dscf) for each sample. Samples shall be taken at approximately 60-minute intervals. Each sample represents a one-hour average. Method 6B shall be operated for 24 hours per sample, and the minimum sample volume is 0.02 dscm (0.71 dscf) for each sample. Each Method 6B sample represents 24 1-hour averages.

3. For Method 7~~,~~ or 7A, ~~7C, 7D or 7E~~ samples shall be taken at approximately 30-minute intervals. The arithmetic average of these 2 consecutive samples represent a one-hour average. For Method 7C or 7D each run shall consist of a 1-hour sample.

(i)1. ~~Method~~ Methods 3 or 3A, 6, 6A, 6B, or 6C, and 7, 7A, 7C, 7D, or 7E of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, as applicable, shall be used for conducting ~~performance~~ relative accuracy evaluations of sulfur dioxide and nitrogen oxides continuous emission monitoring systems. Methods 3A, 6C, and 7E shall be used only at the sole discretion of the source owner or operator.

SECTION 35. NR 440.20(8)(a)1. to 6. are amended to read:

NR 440.20(8)(a)1. Method 3 ~~or 3A is~~ shall be used for gas analysis when applying Method 5, 5B, or 17~~, and~~.

2. Method 5, 5B or 17 shall be used for determining particulate matter emissions and associated moisture content~~, but~~ as follows: Method 5 shall be used at affected facilities without FGD systems; Method 5B shall be used only after wet FGD systems; and Method 17 may be used ~~for stack gas temperatures less than 160°C (320°F),~~ at facilities with or without wet FGD systems provided that the stack gas temperature at the sampling location does not exceed a temperature of 160°C (320°F). The procedures of sections 2.1 and 2.3 of Method 5B may be used in Method 17 only if it is used after wet FGD systems. Method 17 may not be used after wet FGD systems if the effluent is saturated or laden with water droplets.

3. For ~~Methods~~ Method 5, 5B, or 17, Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dscm (60 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the department.

4. For Method 5 or 5B, the probe and filter holder heating system in the sampling train shall be set to provide ~~a~~ an average gas temperature ~~no greater than~~ of 160°C (320°F).

5. For determination of particulate emissions, the oxygen or carbon dioxide sample shall be obtained simultaneously with each run of Method 5, 5B, or 17 by traversing the duct at the same sampling location. Method 1 shall be used for selection of the number of oxygen or carbon dioxide traverse points except that no more than 12 sample points are required.

6. For each run using Method 5, 5B, or 17, the emission rate expressed in ng/J heat input shall be determined using the oxygen or carbon-dioxide measurements and particulate matter measurements obtained under this subsection, the dry basis F_c-factor and the dry basis emission rate calculation procedure contained in Method 19.

SECTION 36. NR 440.20(8)(a)7. is repealed.

SECTION 37. NR 440.205 is created to read:

NR 440.205 INDUSTRIAL - COMMERCIAL - INSTITUTIONAL STEAM GENERATING UNIT.

(1) APPLICABILITY. (a) The affected facility to which this section applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of more than 29 MW (100 million Btu/hour).

(b) Any affected facility meeting the applicability requirements under par. (a) and commencing construction, modification, or reconstruction after June 19, 1984, but on or before June 19, 1986, is subject to the following standards:

1. Coal-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 million Btu/hour), inclusive, are subject to the particulate matter and nitrogen oxides standards under this section.

2. Coal-fired affected facilities having a heat input capacity greater than 73 MW (250 million Btu/hour) and meeting the applicability requirements under s. NR 440.19 (standards of performance for fossil fuel-fired steam generators) are subject to the particulate matter and nitrogen oxides standards under this section and to the sulfur dioxide standards in s. NR 440.19(4).

3. Oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 million Btu/hour), inclusive, are subject to the nitrogen oxides standards in this section.

4. Oil-fired affected facilities having a heat input capacity greater than 73 MW (250 million Btu/hour) and meeting the applicability requirements in s. NR 440.19 (standards of performance for fossil fuel-fired steam generators) are also subject to the nitrogen oxides standards in this section and the particulate matter and sulfur dioxide standards in s. NR 440.19(3) and (4).

(c) Affected facilities which also meet the applicability requirements under s. NR 440.26 (standards of performance for petroleum refineries) are subject to the particulate matter and nitrogen oxides standards in s. NR 440.26(5).

(d) Affected facilities which also meet the applicability requirements in s. NR 440.21 (standards of performance for incinerators) are subject to the nitrogen oxides and particulate matter standards in this section.

(e) Steam generating units meeting the applicability requirements in s. NR 440.20 (standards of performance for electric utility steam generating units) are not subject to this section.

(f) Any change to an existing steam generating unit for the sole purpose of combusting gases containing TRS as defined in s. NR 440.45(2) is not considered a modification under s. NR 440.14 and the steam generating unit is not subject to this section.

(2) DEFINITIONS. As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02.

(a) "Annual capacity factor" means the ratio between the actual heat input to a steam generating unit from the fuels listed in sub. (3)(a), (4)(a) or (5)(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

(b) "Byproducts/waste" means any liquid or gaseous substance produced at chemical manufacturing plants or petroleum refineries (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide levels greater than 50% or carbon monoxide levels greater than 10% are not byproduct/waste for the purposes of this section.

(c) "Chemical manufacturing plants" means industrial plants which are classified by the department of commerce under standard industrial classifications (SIC) code 28.

(d) "Coal" means all solid fuels classified as an anthracite, bituminous, subbituminous, or lignite by the American Society for Testing and Materials in ASTM D388-77, Standard Specification for Classification of Coals by Rank, incorporated by reference in s. NR 440.17, coal refuse, and petroleum coke. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this section.

(e) "Coal refuse" means any byproduct of coal mining or coal cleaning operations with an ash content greater than 50%, by weight, and a heating value less than 13,900 kJ/kg (6,000 Btu/lb) on a dry basis.

(f) "Combined cycle system" means a system where a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a heat recovery steam generating unit.

(g) "Conventional technology" means wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

(h) "Distillate oil" means fuel oils which contain 0.05 weight % nitrogen or less and comply with the specifications for fuel oils number 1 and 2, as defined by the American Society for Testing and Materials in ASTM D396-78, Standard Specification for Fuel Oils, incorporated by reference in s. NR 440.17.

(i) "Dry flue gas desulfurization technology" means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

(j) "Duct burner" means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

(k) "Emerging technology" means any sulfur dioxide control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the administrator and received approval to operate as an emerging technology under sub. (10)(a)4.

(l) "Federally enforceable" means all limitations and conditions that are enforceable by the administrator including the requirements of 40 C.F.R. pts. 60 and 61, requirements within any applicable state implementation plan, and any permit requirements established under 40 C.F.R. s. 52.21 or under 40 C.F.R. s. 51.18 and 40 C.F.R. s. 51.24, incorporated by reference in s. NR 440.17.

(m) "Fluidized bed combustion technology" means combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

(n) "Fuel pretreatment" means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

(o) "Full capacity" means operation of the steam generating unit at 90% or more of the maximum steady-state design heat input capacity.

(p) "Heat input" means heat derived from combustion of fuel in a steam generating unit and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(q) "Heat release rate" means the steam generating unit design heat input capacity (in MW or Btu/hour) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

(r) "Heat transfer medium" means any material that is used to transfer heat from one point to another point.

(s) "High heat release rate" means a heat release rate greater than 730,000 J/sec-m^3 (70,000 Btu/hour-ft^3).

(t) "Lignite" means a type of coal classified as lignite A or lignite B by the American Society for Testing and Materials in ASTM D388-77, Standard Specification for Classification of Coals by Rank, incorporated by reference in s. NR 440.17.

(u) "Low heat release rate" means a heat release rate of 730,000 J/sec-m^3 (70,000 Btu/hour-ft^3) or less.

(v) "Mass-feed stoker steam generating unit" means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

(w) "Maximum heat input capacity" means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

(x) "Municipal-type solid waste" means refuse, more than 50% of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

(y) "Natural gas" means:

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

2. Liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835-86, "Standard Specification for Liquid Petroleum Gases", incorporated by reference in s. NR 440.17.

(z) "Noncontinental area" means the state of Hawaii, the Virgin Islands, Guam, American Samoa, the commonwealth of Puerto Rico, or the Northern Mariana Islands.

(za) "Oil" means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil.

(zb) "Petroleum refinery" means industrial plants as classified by the department of commerce under standard industrial classification (SIC) code 29.

(zc) "Potential sulfur dioxide emission rate" means the theoretical sulfur dioxide emissions (ng/J, lb/million Btu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

(zd) "Process heater" means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

(ze) "Pulverized coal-fired steam generating unit" means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units.

(zf) "Residual oil" means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight %, and all fuel oil numbers 4, 5 and 6, as defined by the American Society for Testing and Materials in ASTM D396-78, Standard Specifications for Fuel Oils, incorporated by reference in s. NR 440.17.

(zg) "Spreader stoker steam generating unit" means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above and in which combustion takes place both in suspension and on the grate.

(zh) "Steam generating unit" means a device that combusts any fuel or byproduct/waste to produce steam or to heat water or any other heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term

does not include process heaters as they are defined in this section.

(zi) "Steam generating unit operating day" means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at anytime in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

(zj) "Very low sulfur oil" means a distillate oil or residual oil that when combusted without post combustion SO_2 control has an SO_2 emission rate equal to or less than 130 ng/J (0.30 lb SO_2/million Btu).

(zk) "Wet flue gas desulfurization technology" means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

(zl) "Wet scrubber system" means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter or sulfur dioxide.

(zm) "Wood" means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

(3) STANDARD FOR SULFUR DIOXIDE. (a) Except as provided in par. (b), (c), or (d), on and after the date on which the performance test is completed or required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility that combusts coal or oil may cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 10% (0.10) of the potential sulfur dioxide emission rate (90% reduction) and that contain sulfur dioxide in excess of the emission limit determined according to the following formula:

$$E_s = (K_aH_a+K_bH_b)/(H_a+H_b)$$

where:

E_s is the sulfur dioxide emission limit, in ng/J or lb/million Btu heat input

K_a is 520 ng/J (or 1.2 lb/million Btu)

K_b is 340 ng/J (or 0.80 lb/million Btu)

H_a is the heat input from the combustion of coal, in J (million Btu)

H_b is the heat input from the combustion of oil, in J (million Btu)

Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat input to the affected facility from exhaust gases from another source, such as gas turbines, internal combustion engines, kilns, etc.

(b) On and after the date on which the performance test is completed or required to be completed under s. NR 440.08, whichever comes first, no owner or operator of an affected facility that combusts coal refuse alone in a fluidized bed combustion steam generating unit may cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 20% of the potential sulfur dioxide emission rate (80% reduction) and that contain sulfur dioxide in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal or oil is fired with coal refuse, the affected facility is subject to par. (a) or (d), as applicable.

(c) On and after the date on which the performance test is completed or is required to be completed under s. NR 440.08, whichever comes first, no owner or operator of an affected facility that combusts coal or oil, either alone or in combination with any other fuel, and that uses an emerging technology for the control of sulfur dioxide emissions, may cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 50% of the potential sulfur dioxide emission rate (50% reduction) and that contain sulfur dioxide in excess of the emission limit determined according to the following formula:

$$E_s = (K_c H_c + K_d H_d)/(H_c + H_d)$$

where:

E_s is the sulfur dioxide emission limit, expressed in ng/J or lb/million Btu heat input

K_c is 260 ng/J (or 0.60 lb/million Btu)

K_d is 170 ng/J (or 0.40 lb/million Btu)

H_c is the heat input from the combustion of coal, in J (million Btu)

H_d is the heat input from the combustion of oil, in J (million Btu)

Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels, or from the heat input to the affected facility from exhaust gases from another source, such as gas turbines, internal combustion engines, kilns, etc.

(d) On and after the date on which the performance test is completed or required to be completed under s. NR 440.08, whichever comes first, no owner or operator of an affected facility listed in subd. 1., 2., 3., or 4., may cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 520 ng/J (1.2 lb/million Btu) heat input if the affected facility combusts coal, or 130 ng/J (0.30 lb/million Btu) heat input if the affected facility combusts oil. Percent reduction requirements are not applicable to affected facilities under this paragraph.

1. Affected facilities that have an annual capacity factor for coal and oil of 30% (0.30) or less and are subject to a federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil to 30% (0.30) or less;

2. Affected facilities located in a noncontinental area;

3. Affected facilities combusting coal or oil, alone or in combination with any other fuel, in a duct burner as part of a combined cycle system where 30% (0.30) or less of the heat input to the steam generating unit is from combustion of coal and oil in the duct burner and 70% (0.70) or more of the heat input to the steam generating unit is from the exhaust gases entering the duct burner; or

4. Affected facilities combusting very low sulfur oil.

(e) Except as provided in par. (f), compliance with the emission limits and percent reduction requirements under this section are determined on a 30-day rolling average basis.

(f) Compliance with the emission limits under this section are determined on a 24-hour average basis for affected facilities which:

1. Have a federally enforceable permit limiting the annual capacity factor for oil to 10% or less;

2. Combust only oil which emits less than 130 ng/J (0.3 SO_2/million Btu); and

3. Do not combust any other fuel.

(g) Except as provided in par. (i), the sulfur dioxide emission limits and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(h) Reductions in the potential sulfur dioxide emission rate through fuel pretreatment are not credited toward the percent reduction requirement under par. (c) unless:

1. Fuel pretreatment results in a 50% or greater reduction in potential sulfur dioxide emissions and

2. Emissions from the pretreated fuel (without combustion or post combustion sulfur dioxide control) are equal to or less than the emission limits specified in par. (c).

(i) An affected facility subject to par. (a), (b), or (c) may combust very low sulfur oil or natural gas when the sulfur dioxide control system is not being operated because of malfunction or maintenance of the sulfur dioxide control system.

(4) STANDARD FOR PARTICULATE MATTER. (a) On and after the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever comes first, no owner or operator of an affected facility which combusts coal or combusts mixtures of coal with other fuels, may cause to be discharged into the atmosphere from that affected facility any gases which contain particulate matter in excess of the following emission limits:

1. 22 ng/J (0.05 lb/million Btu) heat input;

a. If the affected facility combusts only coal, or

b. If the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels of 10% (0.10) or less.

2. 43 ng/J (0.10 lb/million Btu) heat input if the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels greater than 10% (0.10) and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity

factor greater than 10% (0.10) for fuels other than coal.

3. 86 ng/J (0.20 lb/million Btu) heat input if the affected facility combusts coal or coal and other fuels and:

a. Has an annual capacity factor for coal or coal and other fuels of 30% (0.30) or less,

b. Has a maximum heat input capacity of 73 MW (250 million Btu/hour) or less,

c. Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor 30% (0.30) or less for coal or coal and other solid fuels, and

d. Construction of the affected facility commenced after June 19, 1984 and before November 25, 1986.

(b) On or after the date on which the performance test is completed or required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility that combusts oil or that combusts mixtures of oil with other fuels may cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of 43 ng/J (0.10 lb/million Btu) heat input.

(c) On and after the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility that combusts wood, or wood with other fuels, except coal, may cause to be discharged from that affected facility any gases that contain particulate matter in excess of the following emission limits:

1. 43 ng/J (0.10 lb/million Btu) heat input if the affected facility has an annual capacity factor greater than 30% (0.30) for wood.

2. 86 ng/J (0.20 lb/million Btu) heat input if:

a. The affected facility has an annual capacity factor of 30% (0.30) or less for wood,

b. Is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor 30% (0.30) or less for wood, and:

c. Has a maximum heat input capacity of 73 MW (250 million Btu/hour) or less.

(d) On and after the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever date

comes first, no owner or operator of an affected facility that combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels, may cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of the following emission limits:

1. 43 ng/J (0.10 lb/million Btu) heat input if;

a. the affected facility combusts only municipal-type solid waste, or

b. the affected facility combusts municipal-type solid waste and other fuels and has an annual capacity factor for the other fuels of 10% (0.10) or less.

2. 86 ng/J (0.20 lb/million Btu) heat input if the affected facility combusts municipal-type solid waste or municipal-type solid waste and other fuels; and

a. Has an annual capacity factor for municipal-type solid waste and other fuels of 30% (0.30) or less,

b. Has a maximum heat input capacity of 73 MW (250 million Btu/hour) or less,

c. Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30% (0.30) for municipal-type solid waste, or municipal-type solid waste and other fuels, and

d. Construction of the affected facility commenced after June 19, 1984, but before November 25, 1986.

(e) For the purposes of this section, the annual capacity factor is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal, wood, or municipal-type solid waste, and other fuels, as applicable, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum design heat input capacity.

(f) On and after the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility subject to the particulate matter emission limits under par. (a), (b) or (c) may cause to be discharged into the atmosphere any gases that exhibit greater than 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

(g) The particulate matter and opacity standards apply at all times, except during period of startup, shutdown or malfunction.

(5) STANDARD FOR NITROGEN OXIDES. (a) On and after the date on which the performance test is completed or is required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil, or natural gas may cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides (expressed as NO_2) in excess of the following emission limits:

Fuel/Steam generating unit type	Nitrogen oxide emission limits ng/J (lb/million Btu) (expressed as NO_2) heat input
1. Natural gas and distillate oil, except 4.:	
a. Low heat release rate	43 (0.10)
b. High heat release rate	86 (0.20)
2. Residual oil:	
a. Low heat release rate	130 (0.30)
b. High heat release rate	170 (0.40)
3. Coal:	
a. Mass-feed stoker	210 (0.50)
b. Spreader stoker and fluidized bed combustion	260 (0.60)
c. Pulverized coal	300 (0.70)
d. Lignite, except e.	260 (0.60)
e. Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace	340 (0.80)
f. Coal-derived synthetic fuels	210 (0.50)
4. Duct burner used in a combined cycle system:	
a. Natural gas and distillate oil	86 (0.20)
b. Residual oil	170 (0.40)

(b) On and after the date on which the initial performance test is required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts mixtures of coal, oil, or natural gas may cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of a limit determined by use of the following formula:

$$E_n = [(EL_{go} \quad H_{go}) + (EL_{ro} \quad H_{ro}) + (EL_c \quad H_c)]/(H_{go} + H_{ro} + H_c)$$

where:

E_n is the nitrogen oxides emission limit (expressed as NO_2), ng/J (lb/million Btu)

EL_{go} is the appropriate emission limit from par. (a)1. for combustion of natural gas or distillate oil, ng/J (lb/million Btu)

H_{go} is the heat input from combustion of natural gas or distillate oil, J (million Btu)

EL_{ro} is the appropriate emission limit from par. (a)2. for combustion of residual oil

H_{ro} is the heat input from combustion of residual oil, J (million Btu)

EL_c is the appropriate emission limit from par. (a)3. for combustion of coal

H_c is the heat input from combustion of coal, J (million Btu)

(c) On and after the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever comes first, no owner or operator of an affected facility that simultaneously combusts coal or oil, or a mixture of these fuels with natural gas, and wood, municipal-type solid waste, or any other fuel may cause to be discharged into the atmosphere any gases that contain nitrogen oxides in excess of the emission limit for the coal or oil, or mixture of these fuels with natural gas combusted in the affected facility, as determined pursuant to par. (a) or (b), unless the affected facility has annual capacity factor for coal or oil, or mixture of these fuels with natural gas of 10% (0.10) or less and is subject to a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10% (0.10) or less for coal, oil, or a mixture of these fuels with natural gas.

(d) On and after the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts natural gas with wood, municipal-type solid waste, or other solid fuel, except coal, may cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 130 ng/J (0.30 lb/million Btu) heat input unless the affected facility has an annual capacity factor for natural gas of 10% (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an

annual capacity factor of 10% (0.10) or less for natural gas.

(e) On and after the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal, oil, or natural gas with byproduct/waste may cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of an emission limit determined by the following formula unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10% (0.10) or less and is subject to a federally enforceable requirement which limits operation of the affected facility to an annual capacity factor of 10% (0.10) or less:

$$E_n = [(EL_{go} \quad H_{go}) + (EL_{ro} \quad H_{ro}) + (EL_c \quad H_c)]/(H_{go} + H_{ro} + H_c)$$

where:

E_n is the nitrogen oxides emission limit (expressed as NO_2), ng/J (lb/million Btu)

EL_{go} is the appropriate emission limit from par. (a)1. for combustion of natural gas or distillate oil, ng/J (lb/million Btu)

H_{go} is the heat input from combustion of natural gas, distillate oil and gaseous byproduct/waste, J (million Btu)

EL_{ro} is the appropriate emission limit from par. (a)2. for combustion of residual oil, ng/J (lb/million Btu)

H_{ro} is the heat input from combustion of residual oil and/or liquid byproduct/waste, J (million Btu)

EL_c is the appropriate emission limit from par. (a)3. for combustion of coal

H_c is the heat input from combustion of coal, J (million Btu)

(f) Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the administrator within 180 days of the initial startup of the affected facility to establish a nitrogen oxide emission limit which shall apply specifically to that affected facility when the byproduct/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the administrator, such as nitrogen oxides emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the

administrator to confirm that the affected facility is unable to comply with the emission limits in par. (e) and to determine the appropriate emission limit for the affected facility.

1. Any owner or operator of an affected facility petitioning for a facility-specific nitrogen oxides emission limit under this section shall:

a. Demonstrate compliance with the emission limits for natural gas and distillate oil in par. (a)1. or for residual oil in par. (a)2., as appropriate, by conducting a 30-day performance test as provided in sub. (7)(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

b. Demonstrate that the affected facility is unable to comply with the emission limits for natural gas and distillate oil in par. (a)1. or for residual oil in par. (a)2., as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under subpar. a.

2. The nitrogen oxides emission limits for natural gas or distillate oil in par. (a)1. or for residual oil in par. (a)2., as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the administrator. If the petition is approved by the administrator, a facility-specific nitrogen oxides emission limit will be established at the nitrogen oxides emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner which the administrator determines to be consistent with minimizing nitrogen oxides emissions.

(g) Any owner or operator of an affected facility that combusts hazardous waste, as defined by 40 C.F.R. pt. 261 or 40 C.F.R. pt. 761, incorporated by reference in s. NR 440.17, with natural gas or oil may petition the administrator within 180 days of the initial startup of the affected facility for a waiver from compliance with the nitrogen oxides emission limit which applies specifically to that affected facility. The petition shall include sufficient and appropriate data, as determined by the administrator, on nitrogen oxides emissions from the affected facility, waste destruction efficiencies, waste composition (including nitrogen content), the quantity of specific wastes to be combusted and combustion conditions, to allow the administrator to determine if the affected facility is able to comply with the nitrogen oxides

emission limits required by this section. The owner or operator of the affected facility shall demonstrate that when hazardous waste is combusted in the affected facility, thermal destruction efficiency requirements for hazardous waste specified in an applicable federally enforceable requirement preclude compliance with the nitrogen oxides emission limits of this section. The nitrogen oxides emission limits for natural gas or distillate oil in par. (a)1. or for residual oil in par. (a)2., as appropriate, are applicable to the affected facility until and unless the petition is approved by the administrator.

Note: See 40 C.F.R. s. 761.70 for regulations applicable to the incineration of materials containing polychlorinated biphenyls (PCBs).

(h) The nitrogen oxide standards under this section apply at all times including periods of startup, shutdown or malfunction.

(6) COMPLIANCE AND PERFORMANCE TEST METHODS AND PROCEDURES FOR SULFUR DIOXIDE. (a) The sulfur dioxide emission standards under sub. (3) apply at all times.

(b) In conducting the performance tests required under s. NR 440.08, the owner or operator shall use the methods and procedures in Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, or the methods and procedures as specified in this section, except as provided in s. NR 440.08(2). Section NR 440.08(6) does not apply to this section. The 30-day notice required in s. NR 440.08(4) applies only to the initial performance test unless otherwise specified by the department.

(c) The owner or operator of an affected facility shall conduct performance tests to determine compliance with the percent of potential sulfur dioxide emission rate ($\%P_s$) and the sulfur dioxide emission rate (E_s) pursuant to sub. (3) following the procedures listed below, except as provided under par. (d).

1. The initial performance test shall be conducted over the first 30 consecutive operating days of the steam generating unit. Compliance with the sulfur dioxide standards shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility.

2. If only coal or only oil is combusted, the following procedures are used:

a. The procedures in Method 19, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, used to determine the hourly sulfur dioxide emission rate (E_{ho}) and the 30-day average emission rate (E_{no}). The hourly averages used to compute the 30-day averages are obtained from the continuous emission monitoring system of sub. (8)(a) or (b).

b. The percent of potential sulfur dioxide emission rate ($\%P_s$) emitted to the atmosphere is computed using the following formula:

$$\%P_s = 100(1-\%R_g/100)(1-\%R_f/100)$$

where:

$\%R_g$ is the sulfur dioxide removal efficiency of the control device as determined by Method 19, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17

$\%R_f$ is the sulfur dioxide removal efficiency of fuel pretreatment as determined by Method 19, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17

3. If coal or oil is combusted with other fuels, the same procedures required in subd. 2. are used, except as provided in the following:

a. An adjusted hourly sulfur dioxide emission rate ($E_{ho}°$) is used in Equation 19-19 of Method 19, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, to compute an adjusted 30-day average emission rate ($E_{ao}°$). The E_{ho} is computed using the following formula:

$$E_{ho}° = [E_{ho}-E_w(1-X_k)]/X_k$$

where:

$E_{ho}°$ is the adjusted hourly sulfur dioxide emission rate, ng/J (lb/million Btu)

E_{ho} is the hourly sulfur dioxide emission rate, ng/J (lb/million Btu)

E_w is the sulfur dioxide concentration in fuels other than coal and oil combusted in the affected facility, as determined by the fuel sampling and analysis procedures in Method 19, ng/J(lb/million Btu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted.

X_k is the fraction of total heat input from fuel combustion derived from coal, oil, or coal and oil, as determined by applicable procedures in Method 19

b. To compute the percent of potential sulfur dioxide emission rate ($\%P_s$), an adjusted $\%R_g$ ($\%R_g°$) is computed from the adjusted $E_{ao}°$ from par. (b)3.a. and an adjusted average sulfur dioxide inlet rate ($E_{ai}°$) using the following formula:

$$\%R_g° = 100(1.0-E_{ao}°/E_{ai}°)$$

To compute $E_{ai}°$, an adjusted hourly sulfur dioxide inlet rate ($E_{hi}°$) is used. The $E_{hi}°$ is computed using the following formula:

$$E_{hi}° = [E_{hi}-E_w(1-X_k)]/X_k$$

where:

$E_{hi}°$ is the adjusted hourly sulfur dioxide inlet rate, ng/J (lb/million Btu)

E_{hi} is the hourly sulfur dioxide inlet rate, ng/J (lb/million Btu)

4. The owner or operator of an affected facility subject to subd. 3. does not have to measure parameters E_w or X_k if the owner or operator elects to assume that X_k = 1.0. Owners or operators of affected facilities who assume X_k = 1.0 shall determine $\%P_s$, following the procedures in subd. 2., and sulfur dioxide emissions (E_s) shall be considered to be in compliance with sulfur dioxide emission limits under sub. (3).

5. The owner or operator of an affected facility that qualifies under the provisions of sub. (3)(d), does not have to measure parameters E_w or X_k under subd. 3. if the owner or operator of the affected facility elects to measure sulfur dioxide emission rates of the coal or oil following the fuel sampling and analysis procedures under Method 19, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17,

(d) The owner or operator of an affected facility that combusts only oil emitting less than 130 ng/J (0.3 lb/million Btu) SO_2, has an annual capacity factor for oil of 10% (0.10) or less, and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity for oil of 10% (0.10) or less shall:

1. Conduct the initial performance test over 24 consecutive steam generating unit operating hours at full load;

2. Determine compliance with the standards after the initial performance test based on the arithmetic average of the hourly emissions data during each steam generating unit operating day if a continuous emission measurement system (CEMS) is used, or based on a daily average if Method 6B, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, or fuel sampling and analysis procedures under Method 19, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, are used.

(e) The owner or operator of an affected facility subject to sub. (3)(d)1., shall demonstrate the maximum design capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. This demonstration will be made during the initial performance test and a subsequent demonstration may be requested at any other time. If the 24-hour average firing rate for the affected facility is less than the maximum design capacity provided by the manufacturer of the affected facility, the 24-hour average firing rate shall be used to determine the capacity utilization rate for the affected facility, otherwise the maximum design capacity provided by the manufacturer shall be used.

(f) For the initial performance test required under s. NR 440.08, compliance with the sulfur dioxide emission limits and percent reduction requirements under sub. (3) is based on the average emission rates and the average percent reduction for sulfur dioxide for the first 30 consecutive steam generating unit operating days, except as provided under par. (d). The initial performance test is the only test for which at least 30 days prior notice is required unless otherwise specified by the department. The initial performance test is to be scheduled so that the first steam generating unit operating day of the 30 successive steam generating unit operating days is completed within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility. The boiler load during the 30-day period does not have to be the maximum design load, but shall be representative of future operating conditions and include at least one 24-hour period at full load.

(g) After the initial performance test required under s. NR 440.08, compliance with the sulfur dioxide emission limits and percent reduction requirements under sub. (3) is based on the average emission rates and the

average percent reduction for sulfur dioxide for 30 successive steam generating unit operating days, except as provided under par. (d). A separate performance test shall be completed at the end of each steam generating unit operating day after the initial performance test, and a new 30-day average emission rate and percent reduction for sulfur dioxide shall be calculated to show compliance with the standard.

(h) Except as provided under par. (i), the owner or operator of an affected facility shall use all valid sulfur dioxide emissions data in calculating $\%P_s$ and E_{ho} under par. (c), whether or not the minimum emissions data requirements under sub. (7) are achieved. All valid emissions data, including valid sulfur dioxides emission data collected during periods of startup, shutdown and malfunctions, shall be used in calculating $\%P_s$ and E_{ho} pursuant to par. (c).

(i) During periods of malfunction or maintenance of the sulfur dioxide control systems when oil is combusted as provided under sub. (3)(i), emission data are not used to calculate $\%P_s$ or E_s under sub. (3)(a), (b) or (c). However, the emissions data are used to determine compliance with the emission limit under sub. (3)(i).

(7) COMPLIANCE AND PERFORMANCE TEST METHODS AND PROCEDURES FOR PARTICULATE MATTER AND NITROGEN OXIDES. (a) The particulate matter emission standards and opacity limits under sub. (4) apply at all times except during periods of startup, shutdown, or malfunction. The nitrogen oxides emission standards under sub. (5) apply at all times.

(b) Compliance with the particulate matter emission standards under sub. (4) shall be determined through performance testing as described in par. (d).

(c) Compliance with the nitrogen oxides emission standards under sub. (5) shall be determined through performance testing as described in par. (e) or (f).

(d) The following procedures and reference methods are used to determine compliance with the standards for particulate matter emissions under sub. (4). These reference methods and procedures are incorporated by reference in s. NR 440.17.

1. Method 3 is used for gas analysis when applying Method 5 or Method 17.

2. Method 5, Method 5B, or Method 17 shall be used to measure the concentration of particulate matter as follows:

a. Method 5 shall be used at affected facilities without wet flue gas desulfurization (FGD) systems; and

b. Method 17 may be used at facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160°C (320°F). The procedures of ss. 2.1 and 2.3 of Method 5B may be used in Method 17 only if it is used after a wet FGD system. Do not use Method 17 after wet FGD systems if the effluent is saturated or laden with water droplets.

c. Method 5B is to be used only after wet FGD systems.

3. Method 1 is used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 120 minutes and the minimum sampling volume is 1.7 dscm (60 dscf) except that smaller sampling times or volumes may be approved by the department when necessitated by process variables or other factors.

4. For Method 5, the temperature of the sample gas in the probe and filter holder is monitored and is maintained at 160°C (320°F).

5. For determination of particulate emissions, the oxygen or carbon dioxide sample is obtained simultaneously with each run of Method 5, Method 5B or Method 17 by traversing the duct at the sampling location.

6. For each run using Method 5, Method 5B or Method 17, the emission rate expressed in nanograms per joule heat input is determined using:

a. The oxygen or carbon dioxide measurements and particulate matter measurements obtained under this section,

b. The dry basis F factor, and

c. The dry basis emission rate calculation procedure contained in Method 19 (Appendix A).

7. Method 9 is used for determining the opacity of stack emissions.

(e) To determine compliance with the emission limits for nitrogen oxides required under sub. (5), the owner or operator of an affected facility shall conduct the performance test as required under s. NR 440.08 using the continuous system for monitoring nitrogen oxides under sub. (9).

1. For the initial compliance test, nitrogen oxides from the steam generating unit shall be monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the nitrogen oxides emission standards under sub. (5). The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

2. Following the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever date comes first, the

owner or operator of an affected facility which combusts coal or which combusts residual oil having a nitrogen content greater than 0.30 weight % shall determine compliance with the nitrogen oxides emission standards under sub. (5) on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

3. Following the date on which the initial performance test is completed or is required to be completed under s. NR 440.08, whichever date comes first, the owner or operator of an affected facility which has a heat input capacity greater than 73 MW (250 million Btu/hour) and which combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight % or less shall determine compliance with the nitrogen oxides standards under sub. (5) on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

4. Following the date on which the initial performance test is completed or required to be completed under s. NR 440.08, whichever date comes first, the owner or operator of an affected facility which has a heat input capacity of 73 MW (250 million Btu/hour) or less and which combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight % or less shall, upon request, determine compliance with the nitrogen oxides standards under sub. (5) through the use of a 30-day performance test. During periods when performance tests are not requested, nitrogen oxides emissions data collected pursuant to sub. (9)(g)1. or 2. are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the nitrogen oxides emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

5. If the owner or operator of an affected facility which combusts residual oil does not sample and analyze the residual oil for nitrogen content, as specified in sub. (10)(e), the requirements of subd. 2. apply and the provisions of subd. 4. are inapplicable.

(f) To determine compliance with the emission limit for nitrogen oxides required by sub. (5)(a)4. for duct burners used in combined cycle systems, the owner or operator of an affected facility shall conduct the performance test required under s. NR 440.08 using the nitrogen oxides and oxygen measurement procedures in 40 C.F.R. pt. 60, Appendix A, Method 20, incorporated by reference in s. NR 440.17. During the performance test, one sampling site shall be located as close as practicable to the exhaust of the turbine, as provided by s. 6.1.1 of Method 20, Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17. A second sampling site shall be located at the outlet to the steam generating unit. Measurements of nitrogen oxides and oxygen shall be taken at both sampling sites simultaneously during the performance test. The nitrogen oxides emission rate from the combined cycle system shall be calculated by subtracting the nitrogen oxides emission rate measured at the sampling site at the outlet from the turbine from the nitrogen oxides emission rate measured at the sampling site at the outlet from the steam generating unit.

(8) EMISSION MONITORING FOR SULFUR DIOXIDE. (a) Except as provided in par. (b), the owner or operator of an affected facility subject to the sulfur dioxide standards under sub. (3) shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) for measuring sulfur dioxide concentrations and either oxygen (O_2) or carbon dioxide (CO_2) concentrations and shall record the output of the systems. The sulfur dioxide and either oxygen or carbon dioxide concentrations shall both be monitored at the inlet and outlet of the sulfur dioxide control device.

(b) As an alternative to operating CEMS as required under par. (a), an owner or operator may elect to determine the average sulfur dioxide emissions and percent reduction by:

1. Collecting coal or oil samples in an as-fired condition at the inlet to the steam generating unit and analyzing them for sulfur and heat content according to Method 19 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average sulfur dioxide input rate, or

2. Measuring sulfur dioxide according to Method 6B of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, at the inlet or outlet to the sulfur dioxide control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test

shall consist of 3 paired runs of a suitable sulfur dioxide and carbon dioxide measurement train operated at the candidate location and a second similar train operated according to the procedures in Section 3.2 and the applicable procedures in Section 7 of Performance Specification 2, incorporated by reference in s. NR 440.17. Method 6B, Method 6A, or a combination of Methods 6 and 3 or Methods 6C and 3A, incorporated by reference in s. NR 440.17, are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the 3 paired runs shall be less than 10%.

3. A daily sulfur dioxide emission rate, E_D, shall be determined using the procedure described in Method 6A, Section 7.6.2 (Equation 6A-8) and stated in ng/J (lb/million Btu) heat input.

4. The mean 30-day emission rate is calculated using the daily measured values in ng/J (lb/million Btu) for 30 successive steam generating unit operating days using equation 19-20 of Method 19.

(c) The owner or operator of an affected facility shall obtain emission data for at least 75% of the operating hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the department or the reference methods and procedures as described in par. (b).

(d) The 1-hour average sulfur dioxide emission rates measured by the CEMS required by par. (a) and required under s. NR 440.13(8) shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under sub. (3). Each 1-hour average sulfur dioxide emission rate shall be based on more than 30 minutes of steam generating unit operation and include at least 2 data points with each representing a 15-minute period. Hourly sulfur dioxide emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(e) The procedures in s. NR 440.13 shall be followed for installation, evaluation, and operation of the CEMS.

1. All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3, Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

2. Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of Appendix F, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

3. For affected facilities combusting coal or oil, alone or in combination with other fuels, the span value of the sulfur dioxide CEMS at the inlet to the sulfur dioxide control device shall be 125% of the maximum estimated hourly potential sulfur dioxide emissions of the fuel combusted, and the span value of the CEMS at the outlet to the sulfur dioxide control device shall be 50% of the maximum estimated hourly potential sulfur dioxide emissions of the fuel combusted.

(9) EMISSION MONITORING FOR PARTICULATE MATTER AND NITROGEN OXIDES. (a) The owner or operator of an affected facility subject to the opacity standard under sub. (4) shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.

(b) Except as provided in pars. (g) and (h), the owner or operator of an affected facility subject to the nitrogen oxides standard of sub. (5)(a) shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides emissions discharged to the atmosphere and record the output of the system.

(c) The continuous monitoring systems required under par. (b) shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data shall be recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor required by par. (b) and required under s. NR 440.13 shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under sub. (5). The 1-hour averages shall be calculated using the data points required under s. NR 440.13(2). At least 2 data points shall be used to calculate each 1-hour average.

(e) The procedures under s. NR 440.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

1. For affected facilities combusting coal, wood or municipal-type solid waste, the span value for a continuous monitoring system for measuring opacity shall be between 60 and 80%.

2. For affected facilities combusting coal, oil, or natural gas, the span value for nitrogen oxides is determined as follows:

Fuel	Span Values for Nitrogen Oxides (ppm)
Natural Gas	500
Oil	500
Coal	1,000
Combination	500(x + y) + 1,000z

where:

x is the fraction of total heat input derived from natural gas
y is the fraction of total heat input derived from oil
z is the fraction of total heat input derived from coal

3. All span values computed under subd. 2. for combusting mixtures of regulated fuels shall be rounded to the nearest 500 PPM.

(f) When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 or 7A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, or other approved reference methods to provide emission data for a minimum of 75% of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(g) The owner or operator of an affected facility that has a heat input capacity of 73 MW (250 million Btu/hour) or less, and which has an annual capacity factor for residual oil having a nitrogen content of 0.30 weight % or less, natural gas, distillate oil, or any mixture of these fuels, greater than 10% (0.10) shall:

1. Comply with the provisions of pars. (b), (c), (d), (e)2., (e)3., and (f), or

2. Monitor steam generating unit operating conditions and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to sub. (10)(c).

(h) The owner or operator of an affected facility which is subject to the nitrogen oxides standards of sub. (5)(a)4. is not required to install or operate

a continuous monitoring system to measure nitrogen oxides emissions.

(10) REPORTING AND RECORDKEEPING REQUIREMENTS. (a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by s. NR 440.07. This notification shall include:

1. The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility,

2. If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under subs. (3)(d)1., (4)(a)2., 3.c., (c)2.b., (d)2.c., (5)(c), (d), (e), or (6)(d),

3. The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired, and

4. Notification that an emerging technology will be used for controlling emissions of sulfur dioxide. The administrator will examine the description of the emerging technology and will determine whether the technology qualifies as an emerging technology. In making this determination, the administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of sub. (3)(a) unless and until this determination is made by the administrator.

(b) The owner or operator of each affected facility subject to the sulfur dioxide, particulate matter and nitrogen oxides emission limits under subs. (3), (4), and (5), shall submit to the department the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

(c) The owner or operator of each affected facility subject to the nitrogen oxides standard of sub. (5) who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions under the provisions of sub. (9)(g)2. shall submit to the department for approval a plan that identifies the operating conditions to be monitored under sub. (9)(g)2. and the records to be maintained under par. (j). This plan shall be submitted to the department for approval within 360 days of the initial startup of the affected facility. The plan shall:

1. Identify the specific operating conditions to be monitored and the relationship between these operating conditions and nitrogen oxides emission

rates (i.e., ng/J or lbs/million Btu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (i.e., the ratio of primary air to secondary and/or tertiary air) and the level of excess air (i.e., flue gas oxygen level);

2. Include the data and information that the owner or operator used to identify the relationship between nitrogen oxides emission rates and these operating conditions;

3. Identify how these operating conditions, including steam generating unit load, will be monitored under sub. (9)(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under par. (j). If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan.

(d) The owner or operator of an affected facility shall record and maintain records of the amounts of all fuels combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for each calendar quarter. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(e) For affected facilities that:

1. Combust residual oil having a nitrogen content of 0.3 weight % or less;

2. Have heat input capacities of 73 MW (250 million Btu/hour) or less; and

3. Monitor nitrogen oxides emissions or steam generating unit operating conditions under sub. (9)(g), the owner or operator shall maintain records of the nitrogen content of the oil combusted in the affected facility and calculate the average fuel nitrogen content on a per calendar quarter basis. The nitrogen content shall be determined using ASTM Method D3431-80 (reapproved 1987), Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons, incorporated by reference in s. NR 440.17, or fuel specification data obtained from fuel suppliers. If residual oil blends are being combusted, fuel nitrogen specifications may be prorated based on the ratio of residual oils of different

nitrogen content in the fuel blend.

(f) For facilities subject to the opacity standard under sub. (4), the owner or operator shall maintain records of opacity.

(g) For facilities subject to nitrogen oxides standards under sub. (5), the owner or operator shall maintain records of the following information for each steam generating unit operating day:

1. Calendar date.

2. The average hourly nitrogen oxides emission rates (expressed as NO_2) (ng/J or lb/million Btu heat input) measured or predicted.

3. The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.

4. Identification of the steam generating unit operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards under sub. (5), with the reasons for such excess emissions as well as a description of corrective actions taken.

5. Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

6. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.

7. Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.

8. Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.

9. Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3 of Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

10. Results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 C.F.R. pt. 60, Appendix F, Procedure 1, incorporated by reference in s. NR 440.17.

(h) The owner or operator of any affected facility in any category listed in subd. 1. or 2. is required to submit excess emission reports for any calendar quarter during which there are excess emissions from the affected facility. If

there are no excess emissions during the calendar quarter, the owner or operator shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period.

1. Any affected facility subject to the opacity standards under sub. (4)(e) or to the operating parameter monitoring requirements under s. NR 440.13(9)(a).

2. Any affected facility which is subject to the nitrogen oxides standard of sub. (5), and that:

a. Combusts natural gas, distillate oil, or residual oil with a nitrogen content of 0.3 weight % or less, or

b. Has a heat input capacity of 73 MW (250 million Btu/hour) or less and is required to monitor nitrogen oxides emissions on a continuous basis under sub. (9)(g)1. or steam generating unit operating conditions under sub. (9)(g)2.

3. For the purpose of sub. (4), excess emissions are defined as all 6-minute periods during which the average opacity exceeds the opacity standards under sub. (4)(f).

4. For purposes of sub. (9)(g)1., excess emissions are defined as any calculated 30-day rolling average nitrogen oxides emission rate, as determined under sub. (7)(e), which exceeds the applicable emission limits in sub. (5).

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for nitrogen oxides under sub. (9) shall submit a quarterly report containing the information recorded under par. (g). All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.

(j) The owner or operator of any affected facility subject to the sulfur dioxide standards under sub. (3) shall submit written reports to the department for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.

(k) For each affected facility subject to the compliance and performance testing requirements of sub. (6) and the reporting requirement in par. (j) the following information shall be reported to the department:

1. Calendar dates covered in the reporting period.

2. Each 30-day average sulfur dioxide emission rate (ng/J or lb/million Btu heat input) measured during the reporting period, ending with the last 30-day period in the quarter; reasons for noncompliance with the emission standards; and a description of corrective actions taken.

3. Each 30-day average percent reduction in sulfur dioxide emissions calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for noncompliance with the emission standards; and a description of corrective actions taken.

4. Identification of the steam generating unit operating days that coal or oil was combusted and for which sulfur dioxide or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75% of the operating hours in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken.

5. Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

6. Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.

7. Identification of times when hourly averages have been obtained based on manual sampling methods.

8. Identification of the times when the pollutant concentration exceeded full span of the CEMS.

9. Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3 of Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

10. Results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 C.F.R. pt. 60, Appendix F, Procedure 1, incorporated by reference in s. NR 440.17.

11. The annual capacity factor of each fuel fired as provided under par. (d).

(l) For each affected facility subject to the compliance and performance testing requirements of sub. (6)(d) and the reporting requirements of par. (j), the following information shall be reported to the department:

1. Calendar dates when the facility was in operation during the reporting period;

2. The 24-hour average sulfur dioxide emission rate measured for each steam generating unit operating day during the reporting period that coal or oil was combusted, ending in the last 24-hour period in the quarter; reasons for

noncompliance with the emission standards; and a description of corrective actions taken;

3. Identification of the steam generating unit operating days that coal or oil was combusted for which sulfur dioxide or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at lest 75% of the operating hours; justification for not obtaining sufficient data; and description of corrective action taken.

4. Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification of excluding data, and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

5. Identification of "F" factor used for calculations, method of determination and type of fuel combusted.

6. Identification of times when hourly averages have been obtained based on manual sampling methods.

7. Identification of the times when the pollutant concentration exceeded full span of the CEMS.

8. Description of any modifications to the CEMS which could affect the ability of the CEMS to comply with Performance Specification 2 or 3 of Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

9. Results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 C.F.R. pt. 60, Appendix F, Procedure 1, incorporated by reference in s. NR 440.17.

(m) For each affected facility subject to the sulfur dioxide standards under sub. (3) for which the minimum amount of data required under sub. (8)(f) were not obtained during a calendar quarter, the following information is reported to the department in addition to that required under par. (k).

1. The number of hourly averages available for outlet emission rates and inlet emission rates.

2. The standard deviation of hourly averages for outlet emission rates and inlet emission rates, as determined in Method 19, Section 7, incorporated by reference in s. NR 440.17.

3. The lower confidence limit for the mean outlet emission rate and the upper confidence limit for the mean inlet emission rate, as calculated in Method 19, Section 7, incorporated by reference in s. NR 440.17.

4. The ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as determined in Method 19, Section 7, incorporated by reference in s. NR 440.17.

(n) If a percent removal efficiency by fuel pretreatment (i.e., $\%R_1$) is used to determine the overall percent reduction (i.e., $\%R_0$) under sub. (6), the owner or operator of the affected facility shall submit a signed statement with the quarterly report:

1. Indicating what removal efficiency by fuel pretreatment (i.e., $\%R_1$) was credited for the calendar quarter;

2. Listing the quantity, heat content, and date each pretreated fuel shipment was received during the previous calendar quarter; the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the previous calendar quarter;

3. Documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit;

4. Including a signed statement from the owner or operator of the fuel pretreatment facility certifying that the percent removal efficiency achieved by fuel pretreatment was determined in accordance with the provisions of Method 19 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, and listing the heat content and sulfur content of each fuel before and after fuel pretreatment.

(o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of the record.

SECTION 38. NR 440.21(2)(intro.) is amended to read:

NR 440.21(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 39. NR 440.22(2)(intro.) is amended to read:

NR 440.22(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 40. NR 440.23(2)(intro.), (4)(e) and (5)(b) are amended to read:

NR 440.23(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(4)(e) For the purpose of reports required under s. NR ~~440.13(3)~~ 440.07(3), periods of excess emissions that shall be reported are defined as any 3-hour period during which the average nitrogen oxides emissions (arithmetic average of 3 contiguous one-hour periods) as measured by a continuous monitoring system exceed the standard under sub. (3)(a).

(5)(b) For Method 7, 7A, 7B, 7C, or 7D in 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, the sample site shall be selected according to Method 1 and the sampling point shall be at the centroid of the stack or duct or at a point no closer to the walls than 1 m (3.28 ft). ~~Each~~ For Method 7, 7A, or 7B, each run shall consist of ~~at least~~ 4 grab samples taken at approximately 15-minute intervals. The arithmetic mean of the samples shall constitute the run value. ~~A velocity traverse shall be performed once per run.~~ For ~~Methods~~ Method 7C or 7D each run shall consist of a one-hour sample. A velocity traverse shall be performed once per run.

SECTION 41. NR 440.24(2)(intro.) and (3)(a) are amended to read:

NR 440.24(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(3)(a) On and after the date on which the performance test required to be conducted by s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of ~~2~~ 2.0 kg per metric ton of acid produced (4 4.0 lb per ton), the production being expressed as 100% H_2SO_4.

SECTION 42. NR 440.25(1)(a), (2)(intro.) and (a) and (3)(a)1. are amended to read:

NR 440.25(1)(a) The affected facility to which the provisions of this section apply is each hot mix asphalt ~~concrete plant~~ facility. For the purpose of this section, ~~an~~ a hot mix asphalt ~~concrete plant~~ facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing and weighing hot aggregate; systems for loading, transferring and storing mineral filler; systems for mixing hot mix asphalt ~~concrete~~; and the loading, transfer and storage systems associated with emission control systems.

(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(a) "~~Asphalt concrete plant~~ Hot mix asphalt facility" means any facility, as described in sub. (1), used to manufacture hot mix asphalt ~~concrete~~ by heating and drying aggregate and mixing with asphalt cement.

(3)(a)1. Contain particulate matter in excess of 90 mg/dscm (~~0.04~~ 0.039 gr/dscf).

SECTION 43. NR 440.26(2)(intro.) and (3)(a)1. are amended to read:

NR 440.26(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(3)(a)1. Particulate matter in excess of 1.0 kg/~~100~~ 1000 kg (1.0 lb/1000 lb) of coke burn-off in the catalyst regenerator.

SECTION 44. NR 440.26(6)(a)2. is amended to read:

NR 440.26(6)(a)2. An instrument for continuously monitoring and recording the concentration of carbon monoxide in gases discharged into the atmosphere from fluid catalytic cracking unit catalyst regenerators. The span of this continuous monitoring system shall be 1,000 ppm. Installation of a carbon monoxide (CO) continuous monitoring system is not required if the owner or operator files a written request for exemption to the department and demonstrates by the following exemption performance test that the average CO emissions are less than 10% of the applicable standard listed in sub. (4). The exemption performance test shall consist of continuously monitoring CO emissions for 30 days using an instrument that meets the requirements of Performance Specification 4 of Appendix B, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, except the span value shall be 100 ppm instead of 1,000 ppm, and if required, the relative accuracy limit shall be 10% or 5 ppm, whichever is greater.

SECTION 45. NR 440.26(7)(a)1.a. and 2. are amended to read:

NR 440.26(7)(a)1.a. Method ~~5 for the concentration of~~ 5B or 5F shall be used to determine particulate matter emissions and associated moisture content from affected facilities without wet FGD systems; only Method 5B shall be used after FGD systems,

2. For Method ~~5~~ 5B or 5F, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min. (0.53 dscf/min.), except that shorter sampling times may be approved by the department when process variables or other factors preclude sampling for at least 60 minutes.

SECTION 46. NR 440.26(7)(d)(intro.) and 2. are amended to read:

NR 440.26(7)(d)(intro.) For the purpose of determining compliance with sub. (5)(a)2., Method 6 shall be used to determine the concentration of SO_2 and Method 15 shall be used to determine the concentration of H_2S and reduced sulfur compounds. Method 15A may be used as an alternative method for determining reduced sulfur compounds. ~~Both~~ These Methods are set out in 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17.

2. If Method 15 is used, each run shall consist of 16 samples taken over a minimum of 3 hours. If Method 15A is used, each run shall consist of one 3-hour sample or 3 1-hour samples. The sampling point shall at the centroid of the cross section of the duct if the cross sectional area is less than 5 m^2 (54 ft^2) or at a point no closer to the walls than one meter (39 inches) if the cross sectional area is 5 m^2 or more and the centroid is more than one meter from the wall. ~~To insure~~ For Method 15, to ensure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least 3 liters/~~minute~~ min (0.1 ft^3/min). The SO_2 equivalent for each run shall be calculated as the arithmetic average of the SO_2 equivalent of each sample during the run. Reference Method 4 of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, shall be used to determine the moisture content of the gases when using Method 15. The sampling point for Method 4 shall be adjacent to the sampling point for Method 15. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. Each run shall span a minimum of 4 consecutive hours of continuous sampling. A number of separate samples may be taken for each run provided the total sampling time of these samples adds up to a minimum of 4 consecutive hours. Where more than one sample is used, the average moisture content for the run shall be calculated as the time weighted average of the moisture content of each sample according to the formula:

$$B_{wo} = \sum_{v=1}^{N} B_{si} \frac{t_{si}}{T}$$

where:

B_{wo} is the proportion by volume of water vapor in the gas stream for the run

N is the number of samples

B_{si} is the proportion by volume of water vapor in the gas stream for the sample i

t_{si} is the continuous sampling time for sample i

T is the total continuous sampling time of all N samples

SECTION 47. NR 440.27(title) is amended to read:

NR 440.27 (title) STORAGE VESSELS FOR PETROLEUM LIQUIDS FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER JUNE 11, 1973, AND PRIOR TO MAY 19, 1978.

SECTION 48. NR 440.27(2)(intro.) and (i) are amended to read:

NR 440.27(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(i) "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile ~~non-viscous~~ nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM ~~D323-72~~ D323-82, incorporated by reference in s. NR 440.17.

SECTION 49. NR 440.28(title) is amended to read:

NR 440.28 (title) STORAGE VESSELS FOR PETROLEUM LIQUIDS FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER MAY 18, 1978, AND PRIOR TO JULY 23, 1984.

SECTION 50. NR 440.28(2)(intro.) and (h) are amended to read:

NR 440.28(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the meanings given ~~them~~ in s. NR 440.02.

(h) "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile ~~non-viscous~~ nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM ~~D323-72~~ D323-82, incorporated by reference in s. NR 440.17.

SECTION 51. NR 440.28(4)(a)1.a.(intro.) is amended to read:

NR 440.28(4)(a)1.a.(intro.) Determine the gap areas and maximum gap widths between the primary seal and the ~~tank~~ storage vessel wall, and between the secondary seal and the ~~tank~~ storage vessel wall according to the following frequency ~~and furnish the department with a written report of the results within 60 days of performance of gas measurements~~:

SECTION 52. NR 440.28(4)(a)1.a.4) and 5) are created to read:

NR 440.28(4)(a)1.a.4) Keep records of each gap measurement at the plant for a period of at least 2 years following the date of measurement. Each record shall identify the vessel on which the measurement was performed and shall contain the date of the seal gap measurement, the raw data obtained in the measurement process required by subpar. b. and the calculation required by subpar. c.

5) If either the seal gap calculated in accord with subpar. c. or the measured maximum seal gap exceeds the limitations specified by sub. (3), a report shall be furnished to the department within 60 days of the date of the measurement. The report shall identify the vessel and list each reason why the vessel did not meet the specifications of sub. (3). The report shall also describe the actions necessary to bring the storage vessel into compliance with the specifications of sub. (3).

SECTION 53. NR 440.28(5)(title), (a) and (b) are repealed.

SECTION 54. NR 440.28(5)(c) is renumbered NR 440.28(5)(e).

SECTION 55. NR 440.28(5) (title) and (a) to (d) are created to read:

NR 440.28(5) (title) ALTERNATIVE MEANS OF EMISSION LIMITATION. (a) If, in the administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirements in sub. (3), the administrator will publish in the federal register a notice permitting the use of the alternative means for purpose of compliance with that requirement.

(b) Any notice under par. (a) will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission to use an alternative means of emission limitation under this subsection shall submit to the administrator a written application including:

1. An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

2. An engineering evaluation that the administrator determines is an accurate method of determining equivalence.

(d) The administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in sub. (3).

SECTION 56. NR 440.285 is created to read:

NR 440.285 VOLATILE ORGANIC LIQUID STORAGE VESSELS (INCLUDING PETROLEUM LIQUID STORAGE VESSELS) FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER JULY 23, 1984. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITY. (a) Except as provided in pars. (b) to (d), the affected facility to which this section applies is each storage vessel with a capacity greater than or equal to 40 cubic meters (m^3) that is used to store volatile organic liquids (VOLs) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) Except as specified in sub. (7)(a) and (b), storage vessels with design capacity less than 75 m^3 are exempt from ss. NR 440.01 to 440.18, and from the provisions of this section.

(c) Except as specified in sub. (7)(b) and (c), vessels either with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor less than 3.5 kPa or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa are exempt from ss. NR 440.01 to 440.18 and from the provisions of this section.

(d) This section does not apply to the following:

1. Vessels at coke oven by-product plants.

2. Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

3. Vessels permanently attached to mobile vehicles such as trucks, railcars, barges or ships.

4. Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

5. Vessels located at bulk gasoline plants.

6. Storage vessels located at gasoline service stations.

7. Vessels used to store beverage alcohol.

(2) DEFINITIONS. As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02.

(a) "Bulk gasoline plant" means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under federal requirements or federal, state, or local law, and discoverable by the department and any other person.

(b) "Condensate" means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(c) "Custody transfer" means the transfer of produced petroleum or condensate, after processing or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

(d) "Fill" means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

(e) "Gasoline service station" means a site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

(f) "Maximum true vapor pressure" means the equilibrium partial pressure exerted by the stored liquid at the temperature equal to the highest calendar-month average of the liquid storage temperature for liquids stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the national weather service for liquids stored at the ambient temperature, as determined:

1. In accordance with the method described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, incorporated by reference in s. NR 440.17; or

2. As obtained from standard reference texts; or

3. As determined by ASTM Method D2879-83, incorporated by reference in s. NR 440.17; or

4. Any other method approved by the administrator.

(g) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale and coal.

(h) "Petroleum liquids" means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

(i) "Reid vapor pressure" means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323-82, incorporated by reference in s. NR 440.17.

(j) "Storage vessel" means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

1. Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors; or

2. Subsurface caverns or porous rock reservoirs.

(k) "Volatile organic liquid" or "VOL" means any organic liquid which can emit organic compounds except those VOLs that emit only those compounds which are excluded by name from the definition of volatile organic compound in s. NR 400.02(100).

(l) "Waste" means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

(3) STANDARD FOR VOLATILE ORGANIC COMPOUNDS (VOC). (a) The owner or operator of each storage vessel with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa, or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

1. A fixed roof in combination with an internal floating roof meeting the following specifications:

a. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid

surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

b. Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

1) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the storage vessel.

2) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

3) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

c. Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum break vents) and the rim space vents is to provide a projection below the liquid surface.

d. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

e. Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

f. Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

g. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90% of the opening.

h. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

i. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

2. An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof shall meet the following specifications:

a. Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of 2 seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

1) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in sub. (4)(b)4., the seal shall completely cover the annular space between the edge of the floating roof and storage vessel wall.

2) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in sub. (4)(b)4.

b. Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents

and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90% of the area of the opening.

c. The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the storage vessel is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

3. A closed vent system and control device meeting the following specifications:

a. The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in s. NR 440.62(6)(b).

b. The control device shall be designed and operated to reduce inlet VOC emissions by 95% or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements under s. NR 440.18.

4. A system equivalent to those described in subd. 1., 2. or 3. as provided in sub. (5).

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

1. A closed vent system and control device as specified in sub. (3)(a)3.

2. A system equivalent to that described in subd. 1. as provided in sub. (5).

(4) TESTING AND PROCEDURES. The owner or operator of each storage vessel as specified in sub. (3)(a) shall meet the requirements of par. (a), (b), or (c). The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of sub. (3).

(a) After installing the control equipment required to meet sub. (3)(a)1. (permanently affixed roof and internal floating roof), each owner or operator shall:

1. Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

2. For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required under this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the department in the inspection report required in sub. (6)(a)3. A request for an extension shall document that alternate storage capacity is unavailable and specify a schedule of actions the company owner or operator shall take to assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

3. For vessels equipped with a double-seal system as specified in sub. (3)(a)1.b.2).

a. Visually inspect the vessel as specified in subd. 4. at least every 5 years; or

b. Visually inspect the vessel as specified in subd. 2.

4. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes (if any), and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10% open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event may inspections

conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels undergoing annual visual inspections as specified in subd. 2. or at intervals greater than 5 years in the case of vessels specified in subd. 3.

5. Notify the department in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by subds. 1. and 4. to afford the department the opportunity to have an observer present. If the inspection required by subd. 4. is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the storage vessel, the owner or operator shall notify the department at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the department at least 7 days prior to the refilling.

(b) After installing the control equipment required to meet sub. (3)(a)2. (external floating roof), the owner or operator shall:

1. Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

a. Measurements of gaps between the storage vessel wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

b. Measurements of gaps between the storage vessel wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

c. If any source ceases to store VOL for a period of one year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of subpars. a. and b.

2. Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

a. Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

b. Measure seal gaps around the entire circumference of the storage vessel in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

c. The total surface area of each gap described in subpar. b. shall be determined by using probes of various widths to measure accurately the actual distance from the storage vessel wall to the seal and multiplying each such width by its respective circumferential distance.

3. Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the storage vessel and compare each ratio to the respective standards in subd. 4.

4. Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in subpar. a.

a. The accumulated area of gaps between the storage vessel wall and the mechanical shoe or liquid-mounted primary seal may not exceed 212 cm^2 per meter of storage vessel diameter, and the width of any portion of any gap may not exceed 3.81 cm.

1) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

2) There may be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

b. The secondary seal is to meet the following requirements:

1) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the storage vessel wall except as provided in subd. 2.c.

2) The accumulated area of gaps between the storage vessel wall and the secondary seal may not exceed 21.2 cm^2 per meter of storage vessel diameter, and the width of any portion of any gap may not exceed 1.27 cm.

3) There may be no holes, tears, or other openings in the seal or seal fabric.

c. If a failure that is detected during inspections required in subd. 1. cannot be repaired within 45 days, a 30-day extension may be requested from the department in the inspection report required in sub. (6)(b)4. An extension

request shall include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

5. Notify the department 30 days in advance of any gap measurements required by subd. 1. to afford the department opportunity to have an observer present.

6. Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

a. If the external floating roof has defects, or the primary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

b. For all the inspections required by this subdivision, the owner or operator shall notify the department in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the department the opportunity to inspect the storage vessel prior to refilling. If the inspection required by this subdivision is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the storage vessel, the owner or operator shall notify the department at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the department at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in sub. (3)(a)3. or (b)2. (other than a flare) is exempt from s. NR 440.08 and shall meet the following requirements:

1. Submit for approval by the administrator as an attachment to the notification required by s. NR 440.07(1)(a), or if the facility is exempt from s. NR 440.07(1)(b), an operating plan containing the following information:

a. Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation shall include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the

control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this section, the efficiency demonstration shall include consideration of all vapors, gases, and liquids received by the closed vent capture system and control devices. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816°C is used to meet the 95% requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

b. A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

2. Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the department in accordance with subd. 1., unless the plan was modified by the department during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in sub. (3)(a)3. or (b)2. shall meet the requirements as specified in the general control device requirements under s. NR 440.18(5) and (6).

(5) ALTERNATIVE MEANS OF EMISSION LIMITATIONS. (a) If, in the administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in sub. (3), the administrator will publish in the federal register a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under par. (a) will be published only after notice and an opportunity for a public hearing.

(c) Any person seeking permission under this section shall submit to the administrator a written application including:

1. An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

2. An engineering evaluation that the administrator determines is an accurate method of determining equivalence.

(d) The administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as specified in sub. (3).

(6) REPORTING AND RECORDKEEPING REQUIREMENTS. The owner or operator of each storage vessel as specified in sub. (3)(a) shall keep records and furnish reports as required by par. (a), (b), or (c) depending upon the control equipment installed to meet the requirements of sub. (3). The owner or operator shall keep copies of all reports and records required by this section, except for the record required by par. (c)1., for at least 2 years. The record required by par. (c)1. will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with sub. (3)(a)1. (fixed roof and internal floating roof), the owner or operator shall meet the following requirements:

1. Furnish the department with a report that describes the control equipment and certifies that the control equipment meets the specifications of subs. (3)(a)1. and (4)(a)1. This report shall be an attachment to the notification required by s. NR 440.07(1)(c).

2. Keep a record of each inspection performed as required by sub. (4)(a)1. to 4. Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

3. If any of the conditions described in sub. (4)(a)2. are detected during the annual visual inspection required by sub. (4)(a)2., a report shall be furnished to the department within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

4. After each inspection required by sub. (4)(a)3. that finds holes or tears in the seal or seal fabric, defects in the internal floating roof, or other control equipment defects listed in sub. (4)(a)3.b., a report shall be furnished to the department within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of sub. (3)(a)1. or (4)(a)3. and list each repair made.

(b) After installing control equipment in accordance with sub. (3)(a)2. (external floating roof), the owner or operator shall meet the following requirements:

1. Furnish the department with a report that describes the control equipment and certifies that the control equipment meets the specifications of subs. (3)(a)2. and (4)(b)2. to 4. This report shall be an attachment to the notification required by s. NR 440.07(1)(c).

2. Within 60 days of performing the seal gap measurements required by sub. (4)(b)1., furnish the department with a report that contains:

a. The date of measurement.

b. The raw data obtained in the measurement.

c. The calculations described in sub. (4)(b)2. and 3.

3. Keep a record of each gap measurement performed as required by sub. (4)(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

a. The date of measurement.

b. The raw data obtained in the measurement.

c. The calculations described in sub. (4)(b)2. and 3.

4. After each seal gap measurement that detects gaps exceeding the limitations specified by sub. (4)(b)4., submit a report to the department within 30 days of the inspection. The report will identify the vessel and contain the information specified in par. (b)2. and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with sub. (3)(a)3. or (b)1. (closed vent system and control device other than a flare), the owner or operator shall keep the following records:

1. A copy of the operating plan.

2. A record of the measured values of the parameters monitored in accordance with sub. (4)(c)2.

(d) After installing a closed vent system and flare to comply with sub. (3), the owner or operator shall meet the following requirements:

1. A report containing the measurements required by s. NR 440.18(6) shall be furnished to the department as required by s. NR 440.08. This report shall be submitted within 6 months of the initial startup date.

2. Records shall be kept of all periods of operation during which the flare pilot flame is absent.

3. Semiannual reports of all periods recorded under subd. 2. in which the pilot flame was absent shall be furnished to the department.

(7) MONITORING OF OPERATIONS. (a) The owner or operator shall keep copies of all records required by this section, except for the record required by par. (b) for at least 2 years. The record required by par. (b) shall be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in sub. (1)(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provisions of this section other than those required by this paragraph.

(c) Except as provided in pars. (f) and (g), the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.6 kPa, or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa, shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in par. (g), the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa, or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa, shall notify the department within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as follows:

1. For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the national weather service.

2. For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

a. Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, incorporated by reference in s. NR 440.17, unless the department specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample or samples.

b. The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

3. For other liquids, the vapor pressure:

a. May be obtained from standard reference texts, or

b. Determined by ASTM Method D2879-83, incorporated by reference in s. NR 440.17, or

c. Measured by an appropriate method approved by the administrator, or

d. Calculated by an appropriate method approved by the administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

1. Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored shall be determined using the methods described in par. (e).

2. For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in sub. (3)(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

a. ASTM Method D2879-83, incorporated by reference in s. NR 440.17; or

b. ASTM Method D323-82 incorporated by reference in s. NR 440.17; or

c. As measured by an appropriate method as approved by the administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specifications of sub. (3) is exempt from the

requirements of pars. (c) and (d).

SECTION 57. NR 440.29(2)(intro.) is amended to read:

NR 440.29(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 58. NR 440.30(2)(intro.) is amended to read:

NR 440.30(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 59. NR 440.31 (title) is amended to read:

NR 440.31 (title) PRIMARY EMISSIONS FROM BASIC OXYGEN PROCESS FURNACES FOR WHICH CONSTRUCTION IS COMMENCED AFTER JUNE 11, 1973.

SECTION 60. NR 440.31(2)(intro.) and (a) are amended to read:

NR 440.31(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(a) ~~"'Basic oxygen process furnace' or 'BOPF'"~~ "Basic oxygen process furnace" or "BOPF" means any furnace ~~producing steel~~ with a refractory lining in which molten steel is produced by charging scrap ~~steel~~ metal, ~~hot metal~~ molten iron, and flux materials or alloy additions into a vessel and introducing a high volume of an oxygen-rich gas. Open hearth, blast and reverberatory furnaces are not included in this definition.

SECTION 61. NR 440.31(2)(b) is repealed and recreated to read:

NR 440.31(2)(b) "Primary emissions" means particulate matter emissions from the BOPF generated during the steel production cycle and captured by the BOPF primary control system.

SECTION 62. NR 440.31(2)(c) is renumbered (d) and, as renumbered, is amended to read:

NR 440.31(2)(d) "Steel production cycle" means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), tapping, and deslagging. This

definition applies to an affected facility constructed, modified, or reconstructed after January 20, 1983. For an affected facility constructed, modified, or reconstructed after June 11, 1973, but on or before January 20, 1983, "steel production cycle" means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following ~~major functions~~ operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used) and tapping.

SECTION 63. NR 440.31(2)(c) is created to read:

NR 440.31(2)(c) "Primary oxygen blow" means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel or through tuyeres in the bottom or through the bottom and sides of the vessel. This definition does not include any additional or secondary oxygen blows made after the primary blow or the introduction of nitrogen or other inert gas through tuyeres in the bottom or bottom and sides of the vessel.

SECTION 64. NR 440.31(3)(a)(intro.) is amended to read:

NR 440.31(3)(a)(intro.) ~~On~~ Except as provided under par. (b), on and after the date on which the performance test required to be conducted by s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may discharge or cause the discharge into the atmosphere from any affected facility any gases which:

SECTION 65. NR 440.31(3)(b) and (c) are created to read:

NR 440.31(3)(b) For affected facilities constructed, modified, or reconstructed after January 20, 1983, the following limits shall apply:

1. On or after the date on which the performance test under s. NR 440.08 is required to be completed, no owner or operator of an affected facility for which open hooding is the method for controlling primary emissions may cause to be discharged to the atmosphere any gases that:

a. Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf), as measured for the primary oxygen blow.

b. Exit from a control device not used solely for the collection of secondary emissions, as defined in s. NR 440.315(2), and exhibit 10% opacity or

greater, except that an opacity greater than 10% but less than 20% may occur once per steel production cycle.

2. On or after the date on which the performance test required by s. NR 440.08 is completed, no owner or operator of an affected facility for which closed hooding is the method for controlling primary emissions may cause to be discharged into the atmosphere any gases that:

a. Contain particulate matter in excess of 68 mg/dscm (0.030 gr/dscf), as measured for the primary oxygen blow.

b. Exit from a control device not used solely for the collection of secondary emissions, as defined in s. NR 440.315(2), and exhibit 10% opacity or greater, except that an opacity greater than 10% but less than 20% may occur once per steel production cycle.

(c) On and after the date on which the performance test required by s. NR 440.08 is completed, each owner or operator of an affected facility subject to par. (b) shall operate the primary gas cleaning system during any reblow in a manner identical to operation during the primary oxygen blow.

SECTION 66. NR 440.31(4)(b)2. and (c) and (5)(b) are amended to read:

NR 440.31(4)(b)2. A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device shall be certified by the manufacturer to be accurate within ~~plus or minus~~ ± 5% of the design water supply pressure. The monitoring device's pressure sensor or pressure tap shall be located close to the water discharge point. The department ~~may approve~~ shall be consulted for approval in advance of selecting alternative locations for the pressure sensor or tap.

(c) Any owner or operator subject to requirements under par. (b) shall report ~~for each calendar quarter~~ to the department, on a semiannual basis, all measurements over any 3-hour period that average more than 10% below the average levels maintained during the most recent performance test conducted under s. NR 440.08 in which the affected facility demonstrated compliance with the ~~standard~~ mass standards under sub. (3)(a)1., (b)1.a. or 2.a. The accuracy of the respective measurements, not to exceed the values specified in par. (b)1. and 2., may be taken into consideration when determining the measurement results that must be reported.

(5)(b) For Method 5 of 40.C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, the sampling ~~for each run shall continue for an~~

~~integral number of cycles with total duration of at least 60 minutes. The sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the department. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping.~~ time shall be as follows:

1. For affected facilities that commenced construction, modification, or reconstruction on or before January 20, 1983, the sampling for each run shall continue for an integral number of steel production cycles with total duration of at least 60 minutes. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping. The minimum sample volume shall be at least 1.5 dscm (53 dscf). Shorter sampling times and smaller sample volumes, when necessitated by process variables or other factors, may be approved by the department.

2. For affected facilities that commence construction, modification, or reconstruction after January 20, 1983, the sampling for each run shall continue for an integral number of primary oxygen blows, with total duration of at least 60 minutes. The minimum sample volume shall be at least 1.5 dscm (53 dscf). Shorter sampling times and smaller sample volumes, when necessitated by process variables or other factors, may be approved by the department.

SECTION 67. NR 440.315 is created to read:

NR 440.315 BASIC OXYGEN PROCESS STEELMAKING FACILITIES FOR WHICH CONSTRUCTION IS COMMENCED AFTER JANUARY 20, 1983. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITIES. (a) The provisions of this section apply to the following affected facilities in an iron and steel plant: top-blown BOPFs and hot metal transfer stations and skimming stations used with bottom-blown or top-blown BOPFs.

(b) This section applies to any facility identified in par. (a) that commences construction, modification or reconstruction after January 20, 1983.

(c) Any BOPF subject to the provisions of this section is subject to those provisions of s. NR 440.31 applicable to affected facilities commencing construction, modification or reconstruction after January 20, 1983.

(2) DEFINITIONS. As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02.

(a) "Basic oxygen process furnace" or "BOPF" means any furnace with a refractory lining in which molten steel is produced by charging scrap metal, molten iron, and flux materials or alloy additions into a vessel and by introducing a high volume of oxygen-rich gas. Open hearth, blast and reverberatory furnaces are not included in this definition.

(b) "Bottom-blown furnace" means any BOPF in which oxygen and other combustion gases are introduced to the bath of molten iron through tuyeres in the bottom of the vessel or through tuyeres in the bottom and sides of the vessel.

(c) "Fume suppression system" means the equipment comprising any system used to inhibit the generation of emissions from steelmaking facilities with an inert gas, flame or steam blanket applied to the surface of molten iron or steel.

(d) "Hot metal transfer station" means the facility where molten iron is emptied from the railroad torpedo car or hot metal car to the shop ladle. This includes the transfer of molten iron from the torpedo car or hot metal car to a mixer (or other intermediate vessel) and from a mixer (or other intermediate vessel) to the ladle. This facility is also known as the reladling station or ladle transfer station.

(e) "Primary emission control system" means the combination of equipment used for the capture and collection of primary emissions, e.g., an open hood capture system used in conjunction with a particular cleaning device such as an electrostatic precipitator or a closed hood capture system used in conjunction with a particulate matter cleaning device such as a scrubber.

(f) "Primary emissions" means particulate matter emissions from the BOPF generated during the steel production cycle which are captured by, and do not thereafter escape from the BOPF primary control system.

(g) "Primary oxygen blow" means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel. This definition does not include any additional, or secondary, oxygen blows made after the primary blow.

(h) "Secondary emission control system" means the combination of equipment used for the capture and collection of secondary emissions, e.g.:

1. An open hood system for the capture and collection of primary and secondary emissions from the BOPF, with local hooding ducted to a secondary

emission collection device such as a baghouse for the capture and collection of emissions from the hot metal transfer and skimming station; or

2. An open hood system for the capture and collection of primary and secondary emissions from the furnace, plus a furnace enclosure with local hooding ducted to a secondary emission collection device, such as a baghouse, for additional capture and collection of secondary emissions from the furnace, with local hooding ducted to a secondary emission collection device, such as a baghouse for the capture and collection of emissions from hot metal transfer and skimming stations; or

3. A furnace enclosure with local hooding ducted to a secondary emission collection device such as a baghouse for the capture and collection of secondary emissions from a BOPF controlled by a closed hood primary emission control system, with local hooding ducted to a secondary emission collection device, such as baghouse, for the capture and collection of emissions from hot metal transfer and skimming stations.

(i) "Secondary emissions" means particulate matter emissions that are not captured by the BOPF primary control system, including emissions from hot metal transfer and skimming stations. This definition also includes particulate matter emissions that escape from openings in the primary emission control system, such as from lance hole openings, gaps or tears in the ductwork of the primary emission control system, or leaks in hoods.

(j) "Skimming station" means the facility where slag is mechanically raked from the top of the molten iron.

(k) "Steel production cycle" means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel, including the following operations: scrap charging, preheating (when used), hot metal charging primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), tapping and deslagging. Hot metal transfer and skimming operations from the next steel production cycle are also included when the hot metal transfer station or skimming station is an affected facility.

(l) "Top-blown furnace" means any BOPF in which oxygen is introduced to the bath of molten iron by means of an oxygen lance inserted from the top of the vessel.

(3) STANDARDS FOR PARTICULATE MATTER. (a) Except as provided under pars. (b) and (c), on and after the date on which the performance test under s.

NR 440.08 is required to be completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any affected facility any secondary emissions that:

1. Exit from the BOPF shop roof monitor (or other building openings) and exhibit greater than 10% opacity during the steel production cycle of any top-blown BOPF or during hot metal transfer or skimming operations for any bottom-blown BOPF, except that an opacity greater than 10% but less than 20% may occur once per steel production cycle.

2. Exit from a control device used solely for the collection of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming operations for a top-blown BOPF and contain particulate matter in excess of 23 mg/dscm (0.010 gr/dscf).

3. Exit from a control device used solely for the collection of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming operations for a top-blown or a bottom-blown BOPF and exhibit more than 5% opacity.

(b) A fume suppression system used to control secondary emissions from an affected facility is not subject to par. (a)2. and 3.

(c) A control device used to collect both primary and secondary emissions from a BOPF is not subject to par. (a)2. and 3.

(4) MONITORING OF OPERATIONS. (a) Each owner or operator of an affected facility shall install, calibrate, operate, and maintain a monitoring device that continually measures and records for each steel production cycle the various rates or levels of exhaust ventilation at each phase of the cycle through each duct of the secondary emission capture system. The monitoring device or devices are to be placed at locations near each capture point of the secondary emission capture system to monitor the exhaust ventilation rates or levels adequately, or in alternative locations approved in advance by the department.

(b) If a chart recorder is used, the owner or operator shall use chart recorders that are operated at minimum chart speed of 3.8 cm/hr (1.5 in/hr).

(c) All monitoring devices are to be certified by the manufacturer to be accurate to within $\pm$ 10% compared to Reference Method 2, 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17. The owner or operator shall recalibrate and check the devices annually and at other times as the department may require, in accordance with the written instructions of the

manufacturer and by comparing the device against Reference Method 2, 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17.

(d) Each owner or operator subject to the requirements of par. (a) shall report on a semiannual basis all measurements of exhaust ventilation rates or levels over any 3-hour period that average more than 10% below the average rates or levels of exhaust ventilation maintained during the most recent performance test conducted under s. NR 440.08 in which the affected facility demonstrated compliance with the standard under sub. (3)(a)2. The accuracy of the respective measurements, not to exceed the values specified in par. (c), may be considered when determining the measurement results that are to be reported.

(e) If a scrubber primary emission control device is used to collect secondary emissions, the owner or operator shall report on a semiannual basis all measurements of exhaust ventilation rate over any 3-hour period that average more than 10% below the average levels maintained during the most recent performance text conducted under s. NR 440.08 in which the affected facility demonstrated compliance with the standard under sub. (3)(a)1.

(5) TEST METHODS AND PROCEDURES. (a) The reference methods in Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, except as provided under s. NR 440.08(2) and as follows, shall be used to determine compliance with sub. (3):

1. Method 1 for sample and velocity traverses;

2. Method 2 for volumetric flow rate;

3. Method 3 for gas analysis;

4. Method 5 for concentration of particulate matter and associated moisture content; and

5. Method 9 for visible emissions except as provided in par. (b).

(b) For Method 9, the following instructions for recording observations and reducing data shall apply instead of Section 2.4 and 2.5 of Method 9:

1. Substitute for Section 2.4. Opacity observations shall be recorded to the nearest 5% at 15-second intervals. During the initial performance test conducted under s. NR 440.08, observations shall be made and recorded in this manner for a minimum of 3 steel production cycles. During any subsequent compliance test, observations may be made for any number of steel production cycles, although, where conditions permit, observations will generally be made for a minimum of 3 steel production cycles.

2. Substitute forSection 2.5. Opacity shall be determined as an average of 12 consecutive observations recorded at 15-second intervals. For each steel production cycle, divide the observations recorded into sets of 12 consecutive observations. Sets need not be consecutive in time, and in no case may 2 sets overlap. For each set of 12 observations, calculate the average by summing the opacity of 12 consecutive observations and dividing this sum by 12.

(c) For the sampling of secondary emissions by Method 5 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, each run is to continue for a sufficient number of steel production cycles to ensure a total sample volume of at least 5.67 dscm (200 dscf) for each run. Shorter sampling times and smaller sample volumes, when necessitated by process variables or other factors, may be approved by the department. Sampling is to be conducted only during the steel production cycle.

(d) For the monitoring and recording of exhaust ventilation rates or levels required by sub. (4)(a), the following instructions for Reference Method 2, Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, shall apply:

1. For devices that monitor and record the exhaust ventilation rate, compare velocity readings recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings at a point or points that would properly characterize the monitoring device's performance and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the 2 sets to determine whether the monitoring device velocity is within $\pm$ 10% of the Method 2 average.

2. For devices that monitor the level of exhaust ventilation and record only step changes when a set point rate is reached, compare step changes recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings at a point or points that would properly characterize the performance of the monitoring device and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the 2 sets to determine whether the monitoring device step change is within $\pm$ 10% of the setpoint rate.

(6) COMPLIANCE PROVISIONS. (a) When determining compliance with mass and visible emission limits specified in sub. (3)(a)2. and 3., the owner or operator of a BOPF shop that normally operates 2 furnaces with overlapping cycles may elect to operate only one furnace. If an owner or operator chooses to shut down one furnace, he or she shall be allowed a reasonable time period to adjust the production schedule before the compliance tests are conducted. The owner or operator of an affected facility may also elect to suspend shop operations not subject to this section during compliance testing.

(b) During compliance testing for mass and visible emission standards, if an owner or operator elects to shut down one furnace in a shop that normally operates 2 furnaces with overlapping cycles, the owner or operator shall operate the secondary emission control system for the furnace being tested at exhaust ventilation rates or levels for each duct of the secondary emission control system that are appropriate for single-furnace operating. Following the compliance test, the owner or operator shall operate the secondary emission control system at exhaust ventilation rates or levels for each duct of the system that are no lower than 90% of the exhaust ventilation values established during the most recent compliance test.

(c) For the purpose of determining compliance with visible and mass emission standards, a steel production cycle begins when the scrap or hot metal is charged to the vessel (whichever operation occurs first) and terminates 3 minutes after slag is emptied from the vessel into the slag pot. Consecutive steel production cycles are not required for the purpose of determining compliance. Where a hot metal transfer or skimming station is an affected facility, the steel production cycle also includes the hot metal transfer or skimming operation for the next steel production cycle for the affected vessel. Visible emission observations for both hot metal transfer and skimming operations begin with the start of the operation and terminate 3 minutes after completion of the operation.

(d) For the purpose of determining compliance with visible emission standards specified in sub. (3)(a)1. and 3., the starting and stopping times of regulated process operations shall be determined and the starting and stopping times of visible emissions data sets shall be determined accordingly.

(e) To determine compliance with sub. (3)(a)1., select the data sets yielding the highest and second highest 3-minute average opacities for each steel production cycle. Compliance is achieved if the highest 3-minute average

for each cycle observed is less than 20% and the second highest 3-minute average is 10% or less.

(f) To determine compliance with sub. (3)(a)2., determine the concentration of particulate matter in exhaust gases exiting the secondary emission collection device with Reference Method 5 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17. Compliance is achieved if the concentration of particulate matter does not exceed 23 mg/dscm (0.010 gr/dscf).

(g) To determine compliance with sub. (3)(a)3., construct consecutive 3-minute averages for each steel production cycle. Compliance is achieved if no 3-minute average is more than 5%.

SECTION 68. NR 440.32(2) is amended to read:

NR 440.32(2) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 69. NR 440.33(2)(intro.) and (6)(d)2. are amended to read:

NR 440.33(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(6)(d)2. 'Sulfur dioxide'. All 6-hour periods during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under sub. (4), exceed the level of the standard. The department ~~shall~~ may not consider emissions in excess of the level of the standard for less than or equal to 1.5% of the 6-hour periods during the quarter as indicative of a potential violation of s. NR 440.11(4), provided the affected facility, including air pollution control equipment, is maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions during these periods. Emissions in excess of the level of the standard during periods of startup, shutdown and malfunction may not ~~to~~ be included within the 1.5%.

SECTION 70. NR 440.34(2)(intro.) is amended to read:

NR 440.34(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 71. NR 440.35(2)(intro.) is amended to read:

NR 440.35(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 72. NR 440.36(2)(intro.), (3)(a)3. and (6)(a) are amended to read:

NR 440.36(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(3)(a)3. ~~0.05~~ 0.050 kg/Mg (~~0.1~~ 0.10 lb/ton) of aluminum equivalent for anode bake plants.

(6)(a) Following the initial performance test as required under s. NR 440.08(1), an owner or operator shall conduct a performance test at least once each month during the life of the affected facility, except when malfunctions prevent representative sampling, as provided under s. NR 440.08(3). The owner or operator shall give the department at least 15 days advance notice of each test. The department may require additional testing under ch. NR 439 ~~or s. NR 445.05~~.

Note: Under 40 C.F.R. s. 60.195(b), an owner or operator may petition the administrator to establish an alternate testing requirement that requires testing less frequently than once each month for a primary control system or an anode bake plant if it can be shown that their emissions have low variability during day-to-day operations. The alternative testing requirement must be published in the federal register and include a testing schedule and, in the case of a primary control system, the method to be used to determine primary control system emissions for the purpose of performance tests.

SECTION 73. NR 440.36(6)(b) is repealed.

SECTION 74. NR 440.37(2)(intro.) is amended to read:

NR 440.37(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 75. NR 440.38(2)(intro.) is amended to read:

NR 440.38(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 76. NR 440.39(2)(intro.) is amended to read:

NR 440.39(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 77. NR 440.40(2)(intro.) is amended to read:

NR 440.40(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 78. NR 440.41(2)(intro.) is amended to read:

NR 440.41(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 79. NR 440.42(2)(intro.) is amended to read:

NR 440.42(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 80. NR 440.43(2)(intro.) is amended to read:

NR 440.43(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 81. NR 440.44(2)(intro.), (4)(c) and (5)(c) are amended to read:

NR 440.44(2) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(4)(c) No continuous monitoring system ~~shall be~~ is required on any modular, multiple-stack, negative-pressure, or positive-pressure fabric filters if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer in accordance with sub. (6)(i).

(5)(c) When the owner or operator of an EAF is required to demonstrate compliance with the standard under sub. (3)(a)3., and at any other time, the department may require that either the control system fan motor amperes and all damper positions or the volumetric flow rate through each separately ducted hood shall be determined during all periods in which the hood is operated for the purpose of capturing emissions from the EAF subject to par. (b). The owner or operator may petition the department for reestablishment of these parameters whenever the owner or operator can demonstrate to the department's satisfaction that the EAF operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters ~~were~~ as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of sub. (7)(a).

Note: Under 40 C.F.R. s. 60.274(d), the owner or operator may petition the administrator to approve any alternative method that will provide a continuous record of operation of each emission capture system.

SECTION 82. NR 440.44(5)(d) is repealed.

SECTION 83. NR 440.445(2)(intro.), (3)(b), (4)(b) and (c) are amended to read:

NR 440.445(2)(intro.) DEFINITIONS. As used in this section ~~all,~~ terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02.

(3)(b) On and after the date on which the performance test required to be conducted by s. NR 440.08 is completed, no owner or operator subject to the provisions of this section ~~shall~~ may cause to be discharged into the atmosphere from the dust-handling system any gases that exhibit 10% opacity or greater.

(4)(b) No continuous monitoring system ~~shall be~~ is required on any control device serving the dust-handling system.

(c) No continuous monitoring system ~~shall be~~ is required on modular, multiple-stack, negative-pressure or positive-pressure fabric filters if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer in accordance with sub. (6)(c).

SECTION 84. NR 440.445(5)(d) Note is created to read:

Note: Under 40 C.F.R. s. 60.274a(e), the owner or operator may petition the administrator to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.

SECTION 85. NR 440.445(5)(e) and (7)(d) are repealed.

SECTION 86. NR 440.45(1)(a) and (b), (2)(intro.) and (c) and (3)(a)2. are amended to read:

NR 440.45(1)(a) The provisions of this section are applicable to the following affected facilities in kraft pulp mills: digester system, brown stock washer system, multiple-effect evaporator system, ~~black liquor oxidation system,~~ recovery furnace, smelt dissolving tank, lime kiln and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this section are applicable when any portion of the material charged to an affected facility is produced by the kraft

pulping operation.

(b) ~~Any~~ Except as noted in sub. (4)(a)1.d., any facility under par. (a) that commences construction or modification after September 24, 1976, is subject to the requirements of this section.

(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(c) "Brown stock washer system" means brown stock washers and associated knotters, vacuum pumps and filtrate tanks used to wash the pulp following the digester system. Diffusion washers are excluded from this definition.

(3)(a)2. From any smelt dissolving tank any gases which contain particulate matter in excess of ~~0.1~~ 0.10 g/kg black liquor solids, dry weight (~~0.2~~ 0.20 lb/ton black liquor solids, dry weight).

SECTION 87. NR 440.45(4)(a)1.(intro.), d., e. and f., 2., 4. and 5. and (5)(a)2.(intro.) and (b)1. are amended to read:

NR 440.45(4)(a)1.(intro.) From any digester system, brown stock washer system, multiple-effect evaporator system~~, black liquor oxidation system~~ or condensate stripper system any gases which contain TRS in excess of ~~5~~ 5.0 ppm by volume on a dry basis, corrected to 10% oxygen, unless the following conditions are met:

d. It has been demonstrated to the department's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified or reconstructed ~~black liquor oxidation system or~~ brown stock washer system in an existing facility is technologically or economically not feasible. Any exempt system shall become subject to the provisions of this section if the facility is changed so that the gases can be incinerated.

e. The gases from the digester system, brown stock washer system~~,~~ or condensate stripper system ~~or black liquor oxidation system~~ are controlled by a means other than combustion. In this case, these systems may not discharge any gases to the atmosphere which contain TRS in excess of ~~5~~ 5.0 ppm by volume on a dry basis, corrected to the actual oxygen content of the untreated gas stream.

f. The uncontrolled exhaust gases from a new, modified, or reconstructed digester system contain TRS less than ~~0.005~~ 0.0050 g/kg ~~ADP~~ air dried pulp (~~0.01~~ 0.010 lb/ton ~~ADP~~ air dried pulp).

2. From any straight kraft recovery furnace any gases which contain TRS in excess of ~~5~~ 5.0 ppm by volume on a dry basis, corrected to 8% oxygen.

4. From any smelt dissolving tank any gases which contain TRS in excess of ~~0.0084~~ 0.016 g/kg black liquor solids~~, dry weight~~ as H_2S (~~0.0168~~ 0.033 lb/ton black liquor solids~~, dry weight~~ as H_2S).

5. From any lime kiln any gases which contain TRS in excess of ~~8~~ 8.0 ppm by volume on a dry basis, corrected to 10% oxygen.

(5)(a)2.(intro.) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, ~~black liquor oxidation system~~ or condensate stripper system, except where the provisions of sub. (4)(a)1.c. or d. apply. These systems shall be located downstream of ~~any~~ the control ~~device~~ devices and the spans of these continuous monitoring systems shall be set:

(b)1. ~~A~~ For any incinerator, a monitoring device which measures the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system or condensate stripper system where the provisions of sub. (4)(a)1.c. apply. The monitoring device shall be certified by the manufacturer to be accurate within ~~plus or minus~~ ± one percent of the temperature being measured.

SECTION 88. NR 440.45(5)(c)4. is created to read:

NR 440.45(5)(c)4. Record once per shift measurements obtained from the continuous monitoring devices installed under par. (b)2.

SECTION 89. NR 440.45(5)(d)(intro.), 3.(intro.) and b. and (6)(d)1. are amended to read:

NR 440.45(5)(d)(intro.) For the purpose of reports required under s. NR 440.07(3), any owner or operator subject to the provisions of this section shall report semiannually periods of excess emissions as follows:

3.(intro.) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system~~, black liquor oxidation system~~ or condensate stripper system, periods of excess emissions are:

b. All periods in excess of 5 minutes and their duration during which the combustion temperature at the point of incineration is less than 1200°F. where the provisions of sub. (4)(a)1.~~b.~~c. apply.

(6)(d)1. Method 16 or, at the discretion of the owner or operator, Method 16A or 16B, for the concentration of TRS.

SECTION 90. NR 440.45(6)(d)3. is repealed and recreated to read:

NR 440.45(6)(d)3. When determining compliance with sub. (4)(a)4., use the results of Method 2, Method 16, 16A or 16B and the black liquor solids feed rate in the following equation to determine the TRS emission rate on an equivalent hydrogen sulfide (H_2S) basis.

$$E = (C_{TRS})(F)(Q_{sd})/BLS$$

where:

E is the mass of TRS emitted per unit of black liquor solids (g/kg) (lb/ton)

C_{TRS} is the average combined concentration of TRS as determined by Method 16, 16A or 16B during the test period, ppm

F = 0.001417 g H_2S/m^3 ppm for metric units,

= 0.08844 lb H_2S/ft^3 ppm for English units

Q_{sd} is the dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr)

BLS is the black liquor solids feed rate, kg/hr (ton/hr)

SECTION 91. NR 440.46(2)(intro.), (3)(a)1. and 2. and Table CC-11 are amended to read:

NR 440.46(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02, unless otherwise required by the context.

(3)(a)1. From any glass melting furnace fired exclusively with either a gaseous fuel or a liquid fuel, particulate matter at emission rates exceeding those specified in Table ~~CC-11~~ 1, Column 2 and Column 3, respectively, or

2. From any glass melting furnace, fired simultaneously with gaseous and liquid fuels, particulate matter at emission rates exceeding STD as specified by the following equation:

$$STD = X[1.3(Y)+(Z)]$$

where:

STD is the particulate matter emission limit, g of particulate/kg of glass produced

X is the emission rate specified in Table ~~CC-11~~ 1 for furnaces fired with gaseous fuel (Column 2)

Y is the decimal percent of liquid fuel heating value to total (gaseous and liquid) fuel heating value fired in the glass melting furnaces as determined in sub. (7)(f) (joules/joules)

Z is equal to (1-Y)~~.~~

Table ~~CC-11~~ 1 -- Emission Rates

[g of particulate/kg of glass produced]

Col. 1 -- Glass manufacturing plant industry segment	Col. 2-- Furnace fired with gaseous fuel	Col. 3-- Furnace fired with liquid fuel
Container glass	~~0.1~~ 0.10	0.13
Pressed and blown glass		
(a) Borosilicate Recipes	~~0.5~~ 0.50	0.65
(b) Soda-Lime and Lead Recipes	~~0.1~~ 0.10	0.13
(c) Other-Than Borosilicate, Soda-Lime, and Lead Recipes (including opal, fluoride and other recipes)	0.25	0.325
Wool fiberglass	0.25	0.325
Flat glass	0.225	0.225

SECTION 92. NR 440.46(4)(b)(intro.), 1. and 3. are amended to read:

NR 440.46(4)(b)(intro.) On and after the date on which the performance test required to be conducted by s. NR 440.08 is completed, no owner or operator of a glass melting furnace with ~~modified processes~~ modified processes subject to the provisions of this section ~~shall~~ may cause to be discharged into the atmosphere from the affected facility:

1. Particulate matter at emission rates exceeding ~~0.5~~ 0.50 gram of particulate per kilogram of glass produced (g/kg) as measured according to par. (e) for container glass, flat glass and pressed and blown glass with a soda-lime recipe melting ~~furnaces~~ furnace.

3. Particulate matter at emission rates exceeding ~~0.5~~ 0.50 g/kg as measured according to par. (e) for textile fiberglass and wool fiberglass melting

furnaces.

SECTION 93. NR 440.47(2)(intro.), (3)(b)1. and (d)3. are amended to read:

NR 440.47(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(3)(b)1. Contains particulate matter in excess of 0.023 g/dscm (ca. ~~0.01~~ 0.010 gr/dscf).

(d)3. Rather than meet the requirements of subds. 1. and 2., the owner or operator may use other methods of emission control if it is demonstrated to the ~~department's~~ administrator's satisfaction that they would reduce emissions of particulate matter to the same level or less.

SECTION 94. NR 440.48(1)(c) is created to read:

NR 440.48(1)(c) Any owner or operator of a metal furniture surface coating operation that uses less than 3,842 liters of coating (as applied) per year and keeps purchase or inventory records or other data necessary to substantiate annual coating usage shall be exempt from all other provisions of this section. These records shall be maintained at the source for a period of at least 2 years.

SECTION 95. NR 440.48(2)(a)(intro.) and (b)(intro.) are amended to read:

NR 440.48(2)(a)(intro.) As used in this section, ~~all~~ terms not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(b) As used in this section, ~~all~~ symbols not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.03.

SECTION 96. NR 440.50(1)(title) is renumbered 440.50(1) and 440.50(1) (excluding title) is renumbered 440.50(1)(a).

SECTION 97. NR 440.50(1)(b) is created to read:

NR 440.50(1)(b) Any facility under par. (a) which commences construction, modification, or reconstruction after October 3, 1977, is subject to the requirements of this section except as provided in sub. (3)(e) and (j).

SECTION 98. NR 440.50(2)(intro.) is amended to read:

NR 440.50(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 99. NR 440.50(2)(o) is repealed.

SECTION 100. NR 440.50(3)(a)3. and (6)(a)1.b. and (b)2.a. are amended to read:

NR 440.50(3)(a)3. F shall be defined according to the nitrogen content of the fuel as follows:

Fuel-Bound Nitrogen (percent by weight)	F (NO_x percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	$0.04(N)$
$0.01 < N \leq 0.25$	$0.004 + 0.0067(N-0.1)$
$N > 0.25$	0.005

where N is the ~~the~~ nitrogen content of the fuel (percent by weight), or manufacturers may develop custom fuel-bound nitrogen allowances for each gas turbine model they manufacture. These fuel-bound nitrogen allowances shall be substantiated with data and must be approved for use by the ~~department~~ administrator before the initial performance test required by s. NR 440.08.

Note: The administrator will publish notices of approval of custom fuel-bound nitrogen allowances in the federal register.

(6)(a)1.b. Manufacturers may develop custom ambient condition correction factors for each gas turbine model they manufacture in terms of combustor inlet pressure, ambient air pressure, ambient air humidity and ambient air temperature to adjust the nitrogen oxides emission level measured by the performance test as provided for in s. NR 440.08 to ISO standard day conditions. These ambient condition correction factors shall be substantiated with data and must be approved for use by the ~~department~~ administrator before the initial performance test required by s. NR 440.08.

Note: The administrator will publish notices of approval of custom ambient condition correction factors in the federal register.

(b)2.a. ASTM ~~D2880-71~~ D2880-78 for the sulfur content of liquid fuels and ASTM D1072-80, D3031-81, D4084-82, or D3246-81 for the sulfur content of gaseous

fuels ~~(these~~ . These methods are incorporated by reference in s. NR 440.17~~)~~. These methods shall also be used to comply with sub. (5)(b).

SECTION 101. NR 440.51(2)(intro.) and (4)(b) are amended to read:

NR 440.51(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(4)(b) The owner or operator of any rotary lime kiln ~~using a positive pressure fabric filter control device subject to the provisions of this section~~ having a control device with a multiple stack exhaust or a roof monitor may, in lieu of the continuous opacity monitoring requirements of par. (a), monitor visible emissions at least once per day of operation by using a certified visible emissions observer who, for each site where visible emissions are observed, will perform ~~and record three~~ 3 Reference Method 9 tests ~~on the gases discharged into the atmosphere~~ and record the results. (Reference Method 9 of 40 C.F.R. pt 60, Appendix A, is incorporated by reference in s. NR 440.17). Visible emission observations shall occur during normal operation of the rotary lime kiln at least once per day. For at least 3 6-minute periods, the opacity shall be recorded for any points where visible emissions are observed, and the corresponding feed rate of the kiln shall also be recorded. Records shall be maintained of any 6-minute average that is in excess of the emissions specified in sub. (3)(a).

SECTION 102. NR 440.51(5)(title) is created to read:

NR 440.51(5)(title) TEST METHODS AND PROCEDURES.

SECTION 103. NR 440.51(5)(c) is amended to read:

NR 440.51(5)(c) Visible emission observations of ~~positive pressure fabric filters~~ a control device with a multiple stack exhaust or a roof monitor shall occur during normal operation of the rotary lime kiln at least once per day of operation. For at least ~~three~~ 3 6-minute periods, the opacity shall be recorded ~~and maintained~~ for any point(s) where visible emissions are observed and the corresponding feed rate of the kiln shall also be recorded ~~and maintained~~. These observations shall be taken in accordance with Method 9 of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17. Records shall be maintained in any 6-minute average that is in excess of the emissions limit specified in sub. (3)(a).

SECTION 104. NR 440.52(2)(intro.) is amended to read:

NR 440.52(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 105. NR 440.53(2)(title) and (a)(intro.) are amended to read:

NR 440.53(2)(title) DEFINITIONS AND SYMBOLS.

(a)(intro.) As used in this section, ~~all~~ terms not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 106. NR 440.53(2)(a)6e., 6g., 6k. and 6p. are created to read:

NR 440.53(2)(a)6e. "Flashoff area" means the structure on automobile and light-duty truck assembly lines between the coating application system (dip tank or spray booth) and the bake oven.

6g. "Guide coat operation" means the guide coat spray booth, flash-off area and bake ovens which are used to apply and dry or cure a surface coating between the prime coat and top coat operation on the components of automobile and light-duty truck bodies.

6k. "Light-duty truck" means any motor vehicle rated at 3,850 kilograms gross vehicle weight or less, designed mainly to transport property.

6p. "Plastic body" means an automobile or light-duty truck body constructed of synthetic organic material.

SECTION 107. NR 440.53(2)(b)(intro.), (4)(c)1.a.3)(intro.) and (7)(a)1. and 2. are amended to read:

NR 440.53(2)(b)(intro.) ~~The nomenclature~~ As used in this section ~~has the following~~, symbols not defined in this paragraph have the meanings~~:~~ given in s. NR 440.03.

(4)(c)1.a.3)(intro.) Select the appropriate transfer efficiency (T) from the following tables for each surface coating operation:

Application method	Transfer efficiency
Air Atomized Spray (waterborne coating)	0.39
Air Atomized Spray (solvent-borne coating). . .	0.50
Manual Electrostatic Spray	0.75
Automatic Electrostatic Spray	0.95
Electrodeposition	1.00

The values in the table above represent an overall system efficiency which includes a total capture of purge. If a spray system uses line purging after each vehicle and does not collect any of the purge material, the following table shall be used:

Application method	Transfer efficiency
Air Atomized Spray (waterborne coating)	0.30
Air Atomized Spray (solvent-borne coating) . .	0.40
Manual Electrostatic Spray	0.62
Automatic Electrostatic Spray.	0.75

~~If the owner or operator can justify to the department's satisfaction that other values for transfer efficiencies are appropriate, the department shall approve their use on a case-by-case basis.~~

Note: Under 40 C.F.R. s. 60.393(c)(1)(i)(C), if the owner or operator can justify to the administrator's satisfaction that other values for transfer efficiencies are appropriate, the administrator will approve their use on a case-by-case basis.

(7)(a)1. Reference Method 24 or an equivalent or alternative method approved by the ~~department~~ administrator shall be used for the determination of the data used in the calculation of the VOC content of the coatings used for each affected facility. Manufacturer's formulation data is approved by the ~~department~~ administrator as an alternative method to Method 24. In the event of dispute, Reference Method 24 shall be the ~~reference~~ referee method.

2. Reference Method 25 or an equivalent or alternative method approved by the ~~department~~ administrator shall be used for the determination of the VOC concentration in the effluent gas entering and leaving the emission control

device for each stack equipped with an emission control device and in the effluent gas leaving each stack not equipped with a control device.

SECTION 108. NR 440.54(2)(intro.) and (3)(a)1.a. are amended to read:

NR 440.54(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(3)(a)1.a. Contain particulate matter in excess of 0.030 kilogram per megagram of phosphate rock feed (~~0.06~~ 0.060 lb/ton), or

SECTION 109. NR 440.55(2)(intro.) is amended to read:

NR 440.55(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 110. NR 440.56(2)(a)(intro.) is amended to read:

NR 440.56(2)(a)(intro.) As used in this section, ~~all~~ terms not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

SECTION 111. NR 440.57(2)(title), (a)(intro.) and (b)(intro.) are amended to read:

NR 440.57(2)(title) DEFINITIONS AND SYMBOLS.

(a)(intro.) As used in this section, ~~all~~ terms not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(b)(intro.) As used in this section ~~all~~, symbols not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.03.

SECTION 112. NR 440.58(2)(title), (a)(intro.) and (b)(intro.) and (4)(c)2.a.2) are amended to read:

NR 440.58(2)(title) DEFINITIONS AND SYMBOLS.

(a)(intro.) As used in this section, ~~all~~ terms not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(b)(intro.) As used in this section, ~~all~~ symbols not defined in this paragraph have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.03.

(4)(c)2.a.2) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC

content (as carbon) of each of the gas streams in and out of the device by the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}$$

where:

n is the number of gas streams entering the control device

m is the number of gas streams leaving the control device and entering the atmosphere

The owner or operator of the affected facility shall construct the VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in sub. (7). The owner or operator of the affected facility shall construct a temporary enclosure around the coating applicator and flashoff area during the performance test for the purpose of evaluating the capture efficiency of the system. The enclosure shall be maintained at a negative pressure to ensure that all VOC emissions are measurable. If a permanent enclosure exists in the affected facility prior to the performance test and the department is satisfied that the enclosure is adequately containing VOC emissions, no additional enclosure ~~shall be~~ is required for the performance test.

SECTION 113. NR 440.59(2)(intro.), (3)(a)1.a. and b. and (5)(k) are amended to read:

NR 440.59(2)(intro.) DEFINITIONS. As used in this section, ~~all~~ terms not defined in this subsection have the ~~meaning~~ meanings given ~~them~~ in s. NR 440.02.

(3)(a)1.a. ~~0.04~~ 0.040 kilograms of particulate per megagram of asphalt shingle or mineral-surfaced roll roofing produced, or

b. ~~0.4~~ 0.40 kilograms per megagram of saturated felt or smooth-surfaced roll roofing produced;

(5)(k) If fuel oil is to be used to fire an afterburner used to control a blowing still, the owner or operator may ~~petition the department in accordance with s. NR 440.11(5) to establish an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. To obtain this opacity standard, the owner or operator shall~~ request the department

to determine opacity during an initial, or subsequent, performance test when fuel oil is being used to fire the afterburner. Upon receipt of the results of the performance test, the department shall make a finding concerning compliance with the mass standard for the blowing still. If the department finds that the facility was in compliance with the mass standard during the performance test but failed to meet the zero opacity standard, the department shall notify the owner or operator and advise him or her of the right to petition the administrator under 40 C.F.R. s. 60.11(e), incorporated by reference in s. NR 440.17, to establish an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. When the afterburner is fired with natural gas, the zero percent opacity ~~remains~~ shall remain the applicable opacity standard.

SECTION 114. NR 440.60(6)(e) is repealed.

SECTION 115. NR 440.60 is renumbered 440.525 and 440.525(2)(intro.), (g) and (h), (3)(a)(intro.), 1. and (b), and (4)(a), as renumbered, are amended to read:

NR 440.525(2)(intro.) DEFINITIONS. As used in this section ~~all~~, terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02.

(g) "Metallic mineral concentrate" means a material containing metallic compounds in concentrations higher than naturally occurring in ore but requiring additional processing if pure metal is to be isolated. A metallic mineral concentrate contains at least one of the following metals in any of its oxidation states and at a concentration that contributes to the concentrate's commercial value: aluminum, copper, gold, iron, lead, molybdenum, silver, titanium, tungsten, uranium, zinc and zirconium. This definition ~~shall~~ may not be construed as requiring that material containing metallic compounds be refined to a pure metal in order for the material to be considered a metallic mineral concentrate to be covered by the standards.

(h) "Metallic mineral processing plant" means any combination of equipment that produces metallic mineral concentrates from ore. Metallic mineral processing commences with the mining of ore and includes all operations either up to and including the loading of wet or dry concentrates or solutions of metallic minerals for transfer to facilities at nonadjacent locations that will

subsequently process metallic concentrates into purified metals (or other products) or up to and including all material transfer and storage operations that precede the operations that produce refined metals (or other products) from metallic mineral concentrates at facilities adjacent to the metallic mineral processing plant. This definition ~~shall~~ may not be construed as requiring that mining of ore be conducted in order for the combination of equipment to be considered a metallic mineral processing plant. (See also the definition of "metallic mineral concentrate.")

(3)(a)(intro.) On and after the date on which the performance test required to be conducted by s. NR 440.08 is completed no owner or operator subject to the provisions of this section ~~shall~~ may cause to be discharged into the atmosphere from an affected facility any stack emissions that:

1. Contain particulate matter in excess of ~~0.05~~ 0.050 grams per dry standard cubic meter.

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up, no owner or operator subject to the provisions of this section ~~shall~~ may cause to be discharged into the atmosphere from an affected facility any process fugitive emissions that exhibit greater than 10% opacity.

(4)(a) The cost of replacement of ore-contact surfaces on processing equipment ~~shall~~ may not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital cost that would be required to construct a comparable new facility" under s. NR 440.15. Ore-contact surfaces are: crushing surfaces; screen meshes; bars, and plates; conveyor belts; elevator buckets; and pan feeders.

SECTION 116. NR 440.61(8)(c) is repealed.

SECTION 117. NR 440.61 is renumbered 440.565 and 440.565(2)(a)(intro.) and (b)(intro.), (5)(b)1. and (c)1. and (6)(g), as renumbered, are amended to read:

NR 440.565(2)(a)(intro.) As used in this section ~~all~~, terms not defined in this subsection have the ~~meaning~~ ~~designated~~ meanings given in s. NR 440.02, unless the context requires otherwise.

(b)(intro.) As used in this section ~~all~~, symbols not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.03.

(5)(b)1. The performance test shall be a one calendar month test and not the average of three runs as specified in s. NR ~~440.08(5)~~ 440.08(6).

(c)1. The performance of the solvent destruction device shall be determined by averaging the results of three test runs as specified in s. NR ~~440.08(5)~~ 440.08(6).

(6)(g) The owner or operator of an affected facility controlled by a solvent destruction device which uses a hood or enclosure to capture fugitive VOC emissions shall install, calibrate, maintain and operate a monitoring device which continuously indicates that the hood or enclosure is operating. No continuous monitor ~~shall be~~ is required if the owner or operator can demonstrate that the hood or enclosure system is interlocked with the affected facility's oven recirculation air system.

SECTION 118. NR 440.62(1)(c), (2)(intro.) and (a)1.c. and (3)(a)3., (b)4.a.2) and (c)3. are amended to read:

NR 440.62(1)(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure ~~shall~~ is not by itself ~~be~~ considered a modification under this section.

(2)(intro.) DEFINITIONS. As used in this section ~~all~~, terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02.

(a)1.c. The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable section:

Table for Determining Applicable ~~for~~ Value of B

Section ~~application~~ applicable to facility	Value of B to be used in equation
~~Sec. NR 440.75~~ This section	12.5
~~Sec. NR 440.76 .....~~	~~12.5~~
~~Sec.~~ NR 440.66	7.0
~~Sec.~~ NR ~~440.77~~ 440.682	4.5

(3)(a)3.~~a.~~ An owner or operator may ~~request~~ apply to the administrator for a determination of equivalence of a means of emission limitation to the requirements of par. (b), (c), (e), (f), (g), (h) or (j) ~~as provided in sub. (5)~~ under 40 C.F.R. s. 60.484, incorporated by reference in s. NR 440.17.

~~b.~~ If the ~~department~~ administrator makes a determination that a means of emission limitation is at least equivalent ~~to the requirements of par. (b), (c),~~

~~(e), (f), (g), (h) or (j) an~~, the owner or operator shall notify the department of that determination and comply with ~~the~~ its requirements ~~of that determination~~ rather than the requirements of par. (b), (c), (e), (f), (g), (h) or (j).

(b)4.a.2) Equipment with a barrier fluid degassing reservoir that is connected by a ~~dosed~~ closed vent system to a control device that complies with the requirements of par. (j); or

(c)3. The barrier fluid system shall be in heavy liquid service or ~~shall~~ may not be in VOC service.

SECTION 119. NR 440.62(3)(j)4. is repealed and recreated to read:

NR 440.62(3)(j)4. Flares used to comply with this section shall comply with the requirements of s. NR 440.18.

SECTION 120. NR 440.62(4)(a)2.(intro.), a., and 4. are amended to read:

NR 440.62(4)(a)2.(intro.) The following requirements shall be ~~not~~ met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

a. An owner or operator ~~must~~ shall notify the department that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in sub. (8)~~(b)~~(d).

4. Owners and operators who elect to comply with this alternative standard ~~shall~~ may not have an affected facility with a leak percentage greater than 2.0 ~~percent~~ %.

SECTION 121. NR 440.62(4)(b)1.b. to g. are renumbered 2.a. to f. and 440.62(4)(b)2.e. and f., as renumbered, are amended to read:

440.62(4)(b)2.e. The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of ~~par. (b)~~ this paragraph.

f. An owner or operator ~~must~~ shall keep a record of the percent of valves found leaking during each leak detection preiod.

SECTION 122. NR 440.62(4)(b)1.b. is created to read:

NR 440.62(4)(b)1.b. An owner or operator shall notify the department before implementing one of the alternative work practices, as specified in sub. (8)~~(b)~~(d).

SECTION 123. NR 440.62(5) is repealed.

SECTION 124. NR 440.62(6)(b)(intro.), (d)1., (e)1. and (g)5. are amended to read:

NR 440.62(6)(b)(intro.) Monitoring as required in subs. (3)~~,~~ and (4) ~~and (5)~~, or required pursuant to an application to the administrator for a determination of equivalence under 40 C.F.R. 60.484, incorporated by reference in s. NR 440.17, shall comply with the following requirements:

(d)1. Each piece of equipment within a process unit is presumed to be in VOC service unless an owner or operator demonstrates that the piece of equipment is not in VOC service. For a piece of equipment to be considered not in VOC service it must be determined that the percent VOC content can be reasonably expected never to exceed 10% by weight. For purposes of determining the percent VOC content in the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the general methods described in ASTM ~~E-260, E-168~~ E260-73, E168-67 or ~~E-169~~ E169-63 shall be used. These ASTM methods are incorporated by reference in s. NR 440.17.

(e)1. The vapor pressure of one or more of the components is greater than 0.3 kPa at 20°C. Vapor pressures may be obtained from standard reference texts or may be determined by ASTM ~~D-2879~~ D2879-83. This ASTM method is incorporated by reference in s. NR 440.17.

(g)5. The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation:

$$V_{max} = 8.706 + 0.7084\ (H_T)$$

where:

V_{max} = maximum permitted velocity, m/sec.

8.706 = constant.

0.7084 = constant.

H_T = the net heating value as determined in subd. 3.

SECTION 125. NR 440.62(8)(f) is repealed.

SECTION 126. NR 440.62(9)(a) is amended to read:

NR 440.62(9)(a) The cost of the following frequently replaced components of the facility ~~shall~~ may not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable new facility" under s. NR 440.15: pump seals, nuts and bolts, rupture disks and packings.

SECTION 127. NR 440.63(2)(title), (a)(intro.) and (b)(intro.), (3)(intro.) and (4)(b)2.a.1) are amended to read:

NR 440.63(2)(title) DEFINITIONS AND SYMBOLS.

(a)(intro.) As used in this section ~~all~~, terms not defined in this ~~subsection~~ paragraph have the ~~meaning designated~~ meanings given in s. NR 440.02.

(b)(intro.) ~~Notations~~ Symbols used ~~under~~ in sub. (4) are defined ~~below~~ as follows:

(3)(intro.) STANDARDS FOR VOLATILE ORGANIC COMPOUNDS. On or after the date on which the initial performance test required by s. NR 440.08(1) is completed, no owner or operator subject to the provisions of this section ~~shall~~ may discharge or cause the discharge of VOC emissions to the atmosphere that exceed the following volume - weighted calendar - month average emissions:

(4)(b)2.a.1) Determine the fraction (F) of total VOC used by the affected facility that enters the control device using the following equation:

$$F = S_e H_e + S_h H_h$$

where H_e and H_h shall be determined by a method that has been previously approved by the ~~department~~ administrator. The owner or operator may use the values of S_e and S_h specified in Table 1 or other values determined by a method that has been previously approved by the ~~department~~ administrator.

Table 1. DISTRIBUTION OF VOC EMISSIONS

Coating Operation	Emission Distribution Coater/flashoff (S_e)	Curing Oven (S_h)
Two-piece aluminum or steel can:		
Exterior base coat operation	0.75	0.25
Overvarnish coating operation	0.75	0.25
Inside spray coating operation	0.80	0.20

SECTION 128. NR 440.63(6)(d) is repealed.

SECTION 129. NR 440.63(7)(a)1. is amended to read:

NR 440.63(7)(a)1. Reference Method 24, an equivalent or alternative method approved by the ~~department~~ administrator, or manufacturer's formulation for data from which the VOC content of the coatings used for each affected facility can be calculated. In the event of dispute, Reference Method 24 shall be the ~~reference~~ referee method. When VOC content of waterborne coatings, determined from data generated by Reference Method 24, is used to determine compliance of affected facilities, the results of the Method 24 analysis shall be adjusted as described in section 4.4 of Method 24.

SECTION 130. NR 440.64(2)(intro.) is amended to read:

NR 440.64(2)(intro.) DEFINITIONS. As used in this section ~~all~~, terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02.

SECTION 131. NR 440.64(2)(d) is renumbered 400.02(43).

SECTION 132. NR 440.64(3)(i) and (7)(a) are amended to read:

NR 440.64(3)(i) No pressure-vacuum vent in the bulk gasoline terminal's vapor collection system ~~shall~~ may begin to open at a system pressure less than 4,500 pascals (450 mm of water).

(7)(a) The cost of the following frequently replaced components of the affected facility ~~shall~~ may not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable entirely new facility" under s. NR 440.15:

pump seals, loading arm gaskets and swivels, coupler gaskets, overfill sensor couplers and cables, flexible vapor hoses and grounding cables and connectors.

SECTION 133. NR 440.642 is created to read:

NR 440.642 NEW RESIDENTIAL WOOD HEATERS. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITY. (a) The affected facility to which the provisions of this section apply is each wood heater manufactured on or after July 1, 1988, or sold at retail on or after July 1, 1990. The provisions of this section do not apply to wood heaters constructed prior to July 1, 1988, that are or have been owned by a noncommercial owner for personal use.

(b) Each affected facility shall comply with the applicable emission limits in sub. (3) unless exempted under par. (c), (d), (e), (f), (g) or (h).

(c) Within a model line, an affected facility manufactured prior to July 1, 1990 is exempt from the emission limits under sub. (3) if that model line has been issued a valid certificate of compliance by the Oregon department of environmental quality prior to January 1, 1988, and meets the Oregon 1988 standards for particulate matter emissions, provided that:

a. The manufacturer requests that exemption in writing from the administrator and certifies that the information used in obtaining Oregon certification satisfied applicable requirements of the Oregon law;

b. The certification test included at least one test run at a burn rate of less than 1.25 kg/hr.

c. No changes in components that may affect emissions have been made to the model line that would require recertification under sub. (4)(k);

d. The manufacturer complies with application requirements contained in sub. (4)(b)1., 2., 5., 6.a. and 11., (c), (m) and (o)2.; and

e. The manufacture submits a copy of the certificate issued by the state of Oregon, a complete set of engineering drawings, and, at a minimum, those portions of the test report that include the emissions summary, the burn rates and the laboratory's description of how the wood heater operates.

2. Affected facilities exempted under this paragraph may not be sold at retail on or after July 1, 1992.

3. Any certificate issued under this paragraph prior to January 1, 1988, shall be modified to reflect any modifications in Oregon certification approved by the Oregon department of environmental quality prior to that date. The manufacturer shall notify the administrator of any such modifications within 30

days of the approval by the Oregon department of environmental quality.

4. Upon denying a certificate under this paragraph the administrator shall give written notice setting forth the basis for this determination to the manufacturer involved.

5. The administrator may revoke a certificate issued under this paragraph if he or she determines that any of the conditions or determinations listed in sub. (4)(l)1.c., d., e., and f. exists, or if the state of Oregon revokes its certification.

(d) An affected facility is exempt from the applicable emission limits of sub. (3), provided that:

1. It was manufactured between July 1, 1988, and June 30, 1989;

2. The manufacturer was a manufacturer of wood heaters as of January 1, 1987, and manufactured (or, in the case of a foreign manufacturer, exported to the United States) fewer than 2,000 wood heaters between July 1, 1987, and June 30, 1988;

3. The manufacturer manufactured no more uncertified wood heaters between July 1, 1988 and June 30, 1989, than manufactured (or, in the case of a foreign manufacturer, exported to the United States) between July 1, 1987 and June 30, 1988; and

4. The affected facility is sold at retail before July 1, 1991.

5. For the purposes of this paragraph, the term "manufacturer" does not include importers of wood heaters.

(e) Affected facilities manufactured in the U.S. for export are exempt from the applicable emission limits of sub. (3) and the requirements of sub. (4).

(f) A wood heater used for research and development purposes that is never offered for sale or sold is exempt from the applicable emission limits of sub. (3) and the requirements of sub. (4). No more than 50 wood heaters manufactured per model line may be exempted for this purpose.

(g) A coal-only heater is exempt from the applicable emission limits of sub. (3) and the requirements of sub. (4).

(h) The following are not affected facilities and are not subject to this section:

1. Open masonry fireplaces constructed on site.

2. Boilers,

3. Furnaces, and

4. Cookstoves.

(i) Modification or reconstruction, as defined in ss. NR 440.14 and 440.15, does not, by itself, make a wood heater an affected facility under this section.

(2) DEFINITIONS. As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02.

(a) "At retail" means the sale by a commercial owner of a wood heater to the ultimate purchaser.

(b) "Boiler" means a solid burning appliance used primarily for heating spaces, other than the space where the appliance is located, by the distribution through pipes of a gas or fluid heated in the appliance. The appliance shall be tested and listed as a boiler under accepted American or Canadian safety testing codes. A manufacturer may request an exemption in writing from the administrator by stating why the testing and listing requirement is not practicable and by demonstrating that this appliance is otherwise a boiler.

(c) "Coal-only heater" means an enclosed, coal-burning appliance capable of space heating, or domestic water heating, which has all of the following characteristics:

1. An opening for emptying ash that is located near the bottom or the side of the appliance.

2. A system that admits air primarily up and through the fuel bed.

3. A grate or other similar device for shaking or disturbing the fuel bed or power-driven mechanical stoker.

4. Installation instructions that state that the use of wood in stove, except for coal ignition purposes, is prohibited by law, and

5. The model is listed by a nationally recognized safety-testing laboratory for use of coal only, except for coal ignition purposes.

(d) "Commercial owner" means any person who owns or controls a wood heater in the course of the manufacture, importation, distribution, or sale of the wood heater.

(e) "Cookstove" means a wood-fired appliance that is designed primarily for cooking food and that has the following characteristics:

1. An oven, with a volume of 0.028 cubic meters (1 cubic foot) or greater, and an oven rack,

2. A device for measuring oven temperatures,

3. A flame path that is routed around the oven,

4. A shaker grate,

5. An ash pan,

6. An ash clean-out door below the oven, and

7. The absence of a gan or heat channels to dissipate heat from the appliance.

(f) "Furnace" means a solid fuel burning appliance that is designed to be located outside of ordinary living areas and that warms spaces other than the space where the appliance is located by the distribution of air heated in the appliance through ducts. The appliance shall be tested and listed as a furnace under accepted American or Canadian safety testing codes unless exempted from this provision by the administrator. A manufacturer may request an exemption in writing from the administrator by stating why the testing and listing requirement is not practicable and by demonstrating that the appliance is otherwise a furnace.

(g) "Manufactured" means completed and ready for shipment (whether or not packaged).

(h) "Manufacturer" means any person who constructs or imports a wood heater.

(i) "Model line" means all wood heaters offered for sale by a single manufacturer that are similar in all material respects.

(j) "Representative affected facility" means an individual wood heater that is similar in all material respects to other wood heaters within the model line it represents.

(k) "Sale" means the transfer of ownership or control, except that transfer of control may not constitute a sale for purposes of sub. (1)(f).

(l) "Similar in all material respects" means that the construction materials, exhaust and inlet air system and other design features are within the allowed tolerances for components identified in sub. (4)(k).

(m) "Wood heater" means an enclosed woodburning appliance capable of and intended for space heating or domestic water heating that meets all of the following criteria:

1. An air-to-fuel ratio in the combustion chamber averaging less than 35-to-1 as determined by the test procedure prescribed in sub. (5), performed at an accredited laboratory,

2. A usable firebox volume of less than 20 cubic feet,

3. A minimum burn rate less than 5 kg/hr as determined by the test procedure prescribed in sub. (5) performed at an accredited laboratory, and

4. A maximum weight of 800 kg. In determining the weight of an appliance for these purposes, fixtures and devices that are normally sold separately, such as flue pipe, chimney, and masonry components that are not an integral part of the appliance or heat distribution ducting, may not be included.

(3) STANDARDS FOR PARTICULATE MATTER. Unless exempted under sub. (1), each affected facility: (a) Manufactured on or July 1, 1988, or sold at retail on or after July 1, 1990, shall comply with the following particulate matter emission limits as determined by the test methods and procedures in sub. (5):

1. An affected facility equipped with a catalytic combustor may not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 5.5 g/hr.

2. An affected facility not equipped with a catalytic combustor may not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 8.5 g/hr.

(b) Manufactured on or after July 1, 1990, or sold at retail on or after July 1, 1992, shall comply with the following particulate matter emission limits as determined by the test methods and procedures in sub. (5):

1. An affected facility equipped with a catalytic combustor may not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 4.1 g/hr. Particulate emissions during any test run at any burn rate that is required to be used in the weighted average may not exceed the value calculated for "C" (rounded to 2 significant figures) calculated using the following equation:

a. At burn rates less than or equal to 2.82 kg/hr,

$C = 3.55\ g/kg \quad BR + 4.98\ g/hr,$

where BR = burn rate in kg/hr

b. At burn rates greater than 2.82 kg/hr,

$C = 15\ g/hr.$

2. An affected facility not equipped with a catalytic combustor may not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 7.5 g/hr. Particulate emissions may not exceed 15 g/hr during any test run at a burn rate less than or equal to 1.5 kg/hr that is required to be used in the weighted average, and particulate emissions may not exceed 18 g/hr during any test burn at a burn rate greater than 1.5 kg/hr that is required to be used in the weighted average.

(4) COMPLIANCE AND CERTIFICATION. (a) For each model line, compliance with applicable emission limits may be determined based on testing of representative affected facilities within the model line.

(b) Any manufacturer of an affected facility may apply to the administrator for a certificate of compliance for a model line. The application shall be in writing to: Stationary Source Compliance Division (EN-341), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington D.C., 20460, Attention: Wood Heater Program. The manufacturer shall submit 2 complete copies of the application and attachments. The application shall be signed by the manufacturer, or an authorized representative, and shall contain the following:

1. The model name and/or design number,

2. Two color photographs of the tested unit (or, for models being certified under sub. (1)(c), photographs of a representative unit), one showing a front view and the other, a side view.

3. a. Engineering drawings and specifications of components that may affect emissions, including specifications for each component listed in par. (k). Manufacturers may use complete assembly or design drawings that have been prepared for other purposes, but should designate on the drawings the dimensions of each component listed in par. (k). Manufacturers shall identify tolerances of components of the tested unit listed in par. (k) 2. that are different from those specified in that paragraph, and show that such tolerances may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits.

b. A statement whether the firebox or any firebox component (other than one listed in par. (k)3.) will be composed of different material from the material used for the firebox or firebox component in the wood heater on which certification testing was performed and a description of any such differences.

c. For applications to certify a model line of catalytic wood heaters to meet the emission limits in sub. (3)(b), a statement describing the manufacturer's program to ensure consistency in the size of any gap in the catalyst bypass mechanism. The statement shall describe, in narrative form, the components of the system that affect the size of the gap, any specifications for critical dimensions of any such components, and the procedure the manufacturer will use to ensure consistency in the size of the catalyst bypass gap.

4. All documentation pertaining to a valid certification test, including the complete test report and, for all test runs: raw data sheets, laboratory

technician notes, calculations, and test results. Documentation shall include the items specified in the applicable test methods. Recommended formats and guidance materials are available from the administrator.

5. For catalytic wood heaters, a copy of the catalytic combustor warranty,

6. A statement that the manufacturer will conduct a quality assurance program for the model line which satisfies the requirements of par. (o).

7. A statement describing how the tested unit was sealed by the laboratory after the completion of certification testing, and

8. A statement that the manufacturer will notify the accredited laboratory if the application for certification is granted, within 30 days of receipt of notification from the U.S. environmental protection agency.

9. Statements that the wood heaters manufactured under this certificate will be:

a. Similar in all material respects to the wood heater submitted for certification testing, and

b. Will be labeled as prescribed in sub. (7).

10. For catalytic wood heaters, a statement that the warranty, access and inspection, and temperature monitoring provisions in pars. (c), (d), and (m) will be met.

11. A statement that the manufacturer will comply with the recordkeeping and reporting requirements in sub. (8).

12. A written estimate of the number of wood heaters that the manufacturer anticipates will be produced annually for the first 2 production years. Compliance with this provision may be obtained by designating one of the following ranges:

a. Less than 2,500,

b. 2,500 to 4,999,

c. 5,000 to 9,999,

d. 10,000 to 49,999,

e. 50,000 or greater; and

13. At the beginning of each test run in a certification test series, 2 photographs of the fuel load: One before and one after it is placed in the wood heater. One of the photographs shall show the front view of the wood load and the other shall show the side view.

14. For manufacturers seeking certification of model lines under sub. (4)(e) to meet the emission limits in sub. (3)(b), a statement that the

manufacturer has entered into a contract with an accredited laboratory which satisfied the requirements of par. (g).

(c) If the affected facility is a catalytic wood heater, the warranty for the catalytic combustor shall include the replacement of the combustor and any prior replacement combustor without charge to the consumer for:

1. Two years from the date the consumer purchased the heater for any defects in workmanship or materials that prevent the combustor from functioning when installed and operated properly in the wood heater, and

2. Three years from the date the consumer purchased the heater for thermal crumbling or disintegration of the substrate material for heaters manufactured after July 1, 1990.

(d) The manufacturer of an affected facility equipped with a catalytic combustor shall provide for a means to allow the owner to gain access readily to the catalyst for inspection or replacement purposes and shall document in the application for certification how the catalyst is replaced.

(e) 1. The administrator shall issue a certificate of compliance for a model line if he or she determines, based on all information submitted by the applicant and any other relevant information available, that:

a. A valid certification test has demonstrated that the wood heater representative of the model line complies with the applicable particulate emission limits in sub. (3),

b. Any tolerances or materials for components listed in pars. (k) 2. or 3. that are different from those specified in those paragraphs may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits, and

c. The requirements of pars. (b), (c), (d), and (m) have been met. The program described under par. (b)3.c. shall be deemed a tolerance specified in the certified design.

2. Upon denying certification under this paragraph, the administrator shall give written notice to the manufacturer setting forth the basis for the determination.

(f) To be valid, a certification test shall be:

1. Announced to the administrator in accordance with sub. (5)(e),

2. Conducted by a testing laboratory accredited by the administrator pursuant to sub. (6),

3. Conducted on a wood heater similar in all material respects to other wood heaters of the model line that is to be certified, and

4. Conducted in accordance with the test methods and procedure specified in sub. (5).

(g) To have a wood heater model certified under sub. (4)(e) to meet the emission limits in sub. (3)(b), a manufacturer shall enter into a contract with the accredited laboratory that performed the certification test, under which the laboratory will:

1. Conduct the random compliance audit test at no cost to the manufacturer if the U.S. environmental protection agency selects that laboratory to conduct the test, or

2. Pay the manufacturer the reasonable cost of a random compliance audit test (as determined by the U.S. environmental protection agency) if the U.S. environmental protection agency selects any other laboratory to conduct the test.

(h) 1. a. The administrator on a monthly basis between April 1, 1987, and July 1, 1990, shall determine whether an undue certification delay exists, pursuant to subd. 2. Such determinations shall be made on or about the 20th day of the month.

b. Any failure of the administrator to make a required determination under subpar a. by the 30th day of any month shall constitute a determination that an undue certification delay exists.

c. Any determination under subpar. a. or b. shall remain in effect until superseded by a subsequent determination, except that a determination under subpar. b. shall remain in effect for at least 30 days.

d. The administrator shall mail notice of all determinations under subpar. a. or b. to all persons who have requested in writing to receive notification.

2. An undue certification delay exists when the sum of the average testing lead time and the certification lead time is greater than 6 months.

a. The average testing lead time shall be determined from the information submitted by accredited laboratories pursuant to sub. (8)(b). The average testing lead time is the simple average of lead times reported under sub. (8)(b)2. for the current month.

b. The certification lead time shall be an estimate, as of the date of the determination, of the time likely to be required to determine whether to issue a certificate of compliance for a complete application received on that date.

This estimate shall be based on factors such as past experience, the number of applications to be processed, and the resources available for processing.

3.a. While any determination under subd. 1. that any undue certification delay exists is in effect, a manufacturer may submit an application for alternative certification.

b. An application for alternative certification shall be in writing to: Stationary Source Compliance Division (EN-341), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, Attention: Wood Heater Program. The application shall be in duplicate copies and signed by the manufacturer, or an authorized representative, and contain the following:

1) The documentation required under par. (b)1. to 6. and 9. to 12., except that in applying par. (b)4., par. (f)1. and 2. does not apply,

2) Evidence of compliance with pars. (c), (d) and (m),

3) A statement that a representative affected facility for the model line in question has been tested in accordance with sub. (5)(a), and meets applicable emission limits in sub. (3). Such testing may be conducted in any laboratory of the manufacturer's choice.

4) A statement identifying the month which will be the end of the manufacturer's production year for that model,

5) Evidence that the manufacturer has scheduled with an accredited laboratory the testing required for full certification under this section at the earliest feasible date,

6) Evidence that the manufacturer has notified the accredited laboratory that the manufacturer intends to apply for alternative certification, and

7) A commitment to report the results of all valid certification tests to the administrator.

c. Test results not obtained under pressurized conditions may be adjusted for altitude according to the following formula:

$$E_A = \frac{E}{AAF}$$

where:

E_A = adjusted emissions in g/hr

E = measured emissions in g/hr at ALT_L

AAF = altitude adjustment factor where

$$AAF = \frac{ALT_L - 300}{6,600} + 1.0$$

ALT_L = altitude above mean sea level of laboratory in feet

4.a. Submission of an application for alternative certification pursuant to subd. 3. automatically renders a model line certified 30 days after receipt of the application for alternative certificate by the administrator, unless alternative certification is denied sooner, on the basis that the application is not complete, or that the test results do not show compliance with the applicable emission limits in sub. (3). Except as provided in subpars. b. to d., alternative certification shall expire on the earlier of:

1) The completion of the manufacturer's production year during which the administrator takes action under par. (e) on an application for certification, or

2) Twelve months after such action.

b. If, in any certification tests performed pursuant to the commitment in subd. 3.b.5), emissions from the affected facility exceed the applicable emission limits in sub. (3) by greater than 50%, alternative certification pursuant to this paragraph shall expire 72 hours after the manufacturer receives notification from the laboratory of the test results, in accordance with subpar. e.

c. If, in any certification test performed under subd. 3.b., emissions from the affected facility exceed the applicable emission limits in sub. (3), alternative certification pursuant to this paragraph shall expire 72 hours after manufacturer received notification satisfying subpar. e. from the laboratory of the test results, if such notification is received within 100 days of the date on which the manufacturer scheduled the certification test.

d. Alternative certification shall expire 72 hours after the manufacturer receives notification from the administrator that the manufacturer has:

1) Failed to meet a scheduled commitment for certification testing,

2) Failed to complete the testing, or

3) Delayed completion of the testing by more than 14 days after certification testing began by ordering additional testing.

e. Any notification under subpar. b. or c. shall include a copy of a preliminary test report from the accredited laboratory. The accredited laboratory shall provide a preliminary test report to the manufacturer and to

the administrator within 10 days of the completion of testing, if a wood heater exceeds the applicable emission limits in sub. (3) in certification testing.

(i) An applicant for certification may apply for a waiver of the requirement to submit the results of a certification test pursuant to par. (b) 4., if the wood heaters of the model line are similar in all material respects to another model line that has already been issued a certificate of compliance. A manufacturer that seeks a waiver of certification testing shall identify the model line that has been certified, and shall submit a copy of an agreement with the owner of the design permitting the applicant to produce wood heaters of that design.

(j) 1. Unless revoked sooner by the administrator, a certificate of compliance shall be valid:

a. Through June 30, 1990, for a model line certified as meeting emissions limits in sub. (3)(a), and

b. For 5 years from the date of issuance, for a model line certified as meeting emission limits in sub. (3)(b).

2. Upon application for renewal of certification by the manufacturer, the administrator may waive the requirement for certification testing upon determining that the model line continues to meet the requirements for certification in par. (e), or that a waiver of certification is otherwise appropriate.

3. Upon waiving certificate testing under sub. 2., the administrator shall give written notice to the manufacturer setting forth the basis for the determination.

(k) 1. A model line shall be recertified whenever any change is made in the design submitted pursuant to par. (b)3. that is presumed to affect the particulate emission rate for that model line. The administrator may waive this requirement upon written request by the manufacturer, if he or she determines that the change may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits. The grant of such a waiver does not relieve the manufacturer of any compliance obligations under this section.

2. Any change in the indicated tolerances of any of the following components (where such components are applicable) is presumed to affect particulate emissions if that change exceeds $\pm$ 5% for any cross-sectional area relating to air introduction systems and catalyst bypass gaps unless other

dimensions and cross-sectional areas are previously approved by the administrator under par. (e)1.b.

a. Firebox: Dimensions,

b. Air introduction systems: Cross-sectional area of restrictive air inlets, outlets, and location, and method of control,

c. Baffles: Dimensions and locations,

d. Refractory/insulation: Dimensions and location,

e. Catalyst: Dimensions and location,

f. Catalyst bypass mechanism and, for model lines certified to meet the emissions limits in sub. (3)(b) catalyst bypass gap tolerances (when bypass mechanism is in closed position): Dimensions, cross-sectional area, and location,

g. Flue gas exit: Dimensions and location,

h. Door and catalyst bypass gaskets: Dimensions and fit,

i. Outer shielding and coverings: Dimensions and location,

j. Fuel feed system: For wood heaters that are designed primarily to burn wood pellets and other wood heaters equipped with a fuel feed system, the fuel feed rate, auger motor design and power rating, and the angle of the auger to the firebox, and

k. Forced air combustion system: For wood heaters so equipped, the location and horsepower of blower motors and the fan blade size.

3. Any change in the materials used for the following components is presumed to affect emissions:

a. Refractory/insulation or

b. Door and catalyst bypass gaskets.

4. A change in the make, model, or composition of a catalyst is presumed to affect emissions, unless the change has been approved in advance by the administrator, based on test data that demonstrate that the replacement catalyst is equivalent to or better than the original catalyst in terms of particulate emission reduction.

(l) The administrator may revoke certification if he or she determines that the wood heaters being produced in that model line do not comply with the requirements of this section or sub. (3). Such a determination shall be based on all available evidence, including:

a. Test data from a retesting of the original unit on which the certification test was conducted,

b. A finding that the certification test was not valid,

c. A finding that the labeling of the wood heater does not comply with the requirements of par. (f),

d. Failure by the manufacturer to comply with reporting and recordkeeping requirements under sub. (8),

e. Physical examination showing that a significant percentage of production units inspected are not similar in all material respects to the representative affected facility submitted for testing, or

f. Failure of the manufacturer to conduct a quality assurance program in conformity with par. (o).

2. Revocation of certification under this paragraph may not take effect until the manufacturer concerned has been given written notice by the administrator setting forth the basis for the proposed determination and an opportunity to request a hearing under sub. (10).

3. Determination to revoke certification based upon audit testing shall be made only in accordance with par. (p).

(m) A catalytic wood heater shall be equipped with a permanent provision to accommodate a commercially available temperature sensor which can monitor combustor gas stream temperatures within or immediately downstream, i.e. within 2.54 centimeters (1 inch), of the combustor surface.

(n) Any manufacturer of an affected facility subject under sub. (1)(b) to the applicable emission limits of this section that does not belong to a model line certified under this section shall cause that facility to be tested in an accredited laboratory in accordance with par. (f)1., 2. and 4. before it leaves the manufacturer's possession and shall report the results to the administrator.

(o)1. For each certified model line, the manufacturer shall conduct a quality assurance program which satisfies the following requirements:

2. Except as provided in sub. 5., the manufacturer or authorized representative shall inspect at least one from every 150 units produced within a model line to determine that the wood heater is within applicable tolerances for all components that affect emissions as listed in par. (k)2.

3.a. Except as provided in subpar. c. or subd. 5., the manufacturer or authorized representative shall conduct an emission test on a randomly selected affected facility produced within a model line certified under par. (e) or (h) on the following schedule:

If weighted average certification test results were—	If yearly production per model is—	
	<2500	≥2500
70% or less of std.	When directed by EPA, not to exceed once every 10,000 stoves.	Every 10,000 stoves or triennially (whichever is more frequent).
Within 30% of std.....	Every 5,000 stoves.	Every 5,000 stoves or annually (whichever is more frequent).

b. Emission tests shall be conducted in conformity with sub. (5)(a) using either approved method for measuring particulate matter as provided in sub. (5). The manufacturer shall notify the U.S. environmental protection agency by U.S. mail that an emissions test required pursuant to this paragraph will be conducted within one week of the mailing of the notification.

c. If the manufacturer stated pursuant to par. (b)3. that the firebox or any firebox component would be composed of a different material than the material used in the wood heater on which certification testing was performed, the first test shall be performed before 1,000 wood heaters are produced. The manufacturer shall submit a report of the results of this emission test to the administrator within 45 days of the completion of testing.

4. The manufacturer shall take remedial measures, as appropriate, when inspection or testing pursuant to this paragraph indicates that affected facilities within the model line are not within applicable tolerances or do not comply with applicable emission limits. Manufacturers shall record the problem identified, the extent of the problem, the remedial measures taken, and the effect of such remedial measures as projected by the manufacturer or determined by any additional testing.

5.a. If 2 consecutive passing tests are conducted under either subd. 2. or 3., the required frequency of testing under the applicable paragraph shall be modified as follows: Skip every other required test.

b. If 5 consecutive passing tests are conducted under the modified schedule provided for in subpar. a., the required frequency of testing under the applicable paragraph shall be further modified as follows: Skip 3 consecutive required tests after each required test that is conducted.

c. Testing shall resume on the frequency specified in subd. 2. or 3. as applicable, if a test failure results during any test conducted under a modified schedule.

6. If emissions tests under this paragraph are conducted at an altitude different from the altitude at which certification tests were conducted, and are not conducted under pressurized conditions, the results shall be adjusted for altitude in accordance with par. (h)3.c.

(p)1.a. The administrator shall after July 1, 1990, select for random compliance audit testing certified wood heater model lines that have not already been subject to a random compliance audit under this paragraph. The administrator may not select more than one model line under this program for every 5 model lines for which certification is granted under par. (e) to meet the emission limits in sub. (3)(b). No accredited laboratory may test or bear the expense of testing, as provided in the contract described in par. (g), more than one model line from every 5 model lines tested by the laboratory for which certification was granted. The administrator shall use a procedure that ensures that the selection process is random.

b. The administrator may, by means of a neutral selection scheme, select model lines certified under par. (b) or (e), for selective enforcement audit testing under this paragraph. Prior to July 1, 1990, the administrator shall only select a model line for a selective enforcement audit on the basis of information indicating that affected facilities within the model line may exceed the applicable emission limit in sub. (3).

2. The administrator shall randomly select for audit testing 5 production wood heaters from each model line selected under this paragraph. These wood heaters shall be selected from completed units ready for shipment from the manufacturer's facility (whether or not the units are in a package or container). The wood heaters shall be sealed upon selection and remain sealed until they are tested or until the audit is completed. The wood heaters shall

be numbered in the order that they were selected.

3.a. The administrator shall test, or direct the manufacturer to test, the first of the 5 wood heaters selected under subd. 2. in a laboratory accredited under sub. (6) that is selected pursuant to subd. 4.

b. The expense of the random compliance audit test shall be the responsibility of the wood heater manufacturer. A manufacturer may require the laboratory that performed the certification test to bear the expense of a random compliance audit test by means of the contract required under par. (g). If the laboratory with which the manufacturer had a contract has ceased business due to bankruptcy or is otherwise legally unable to honor the contract, the administrator may not select any of that manufacturer's model lines for which certification testing has been conducted by that laboratory for a random compliance audit test.

c. The test shall be conducted using the same test method and procedure used to obtain certification. If the certification test consisted of more than one particulate sampling test method, the administrator may use either one of these methods for the purpose of audit testing. If the test is performed in a pressure vessel, air pressure in the pressure vessel shall be maintained within 1% of the average of the barometric pressures recorded for each individual test run used to calculate the weighted average emission rate for the certification test. The administrator shall notify the manufacturer at least one week prior to any test under this paragraph, and allow the manufacturer or authorized representatives to observe the test.

4.a. Except as provided in this paragraph, the administrator may select any accredited laboratory for audit testing.

b. 1) The administrator shall select the accredited laboratory that performed the test used to obtain certification for audit testing, until the administrator has amended this section based upon a determination pursuant to subpar. b.2) to allow testing at another laboratory. If another laboratory is selected pursuant to this subdivision, and the overall precisions of the test method and procedure is greater than $\pm$ 1 gram per hour of the weighted average at laboratories below 304 meters (1,000 feet) elevation (or equivalent), the interlaboratory component of the precision shall be added to the applicable emissions standard for the purposes of this subdivision.

2) With respect to each test method and procedure set out in sub. (5)(a), the administrator shall, by July 1, 1990, publish a decision, after notice of an

opportunity for comment, which either:

a) Amends this section based on a determination of the overall precision of the method and procedure, and the interlaboratory component thereof, or

b) Sets forth a determination that the available data are insufficient to determine the overall precision of the method and procedure, and the interlaboratory component thereof.

c. The administrator may not select an accredited laboratory that is located at an elevation more than 152 meters (500 feet) higher than the elevation of the laboratory which performed the test used to obtain certification, unless the audit test is performed in a pressure vessel.

5.a. If emissions from a wood heater tested under subd. 3. exceed the applicable weighted average emission limit by more than 50%, the administrator shall so notify the manufacturer that certification for that model line is suspended effective 72 hours from the receipt of the notice, unless the suspension notice is withdrawn by the administrator. The suspension shall remain in effect until withdrawn by the administrator, or 30 days from its effective date if a revocation notice under subpar. b. is not issued within that period, or the date of final agency action on revocation, whichever occurs earlier.

b.1) If emissions from a wood heater tested under subd. 3. exceed the applicable weighted average emission limit, the administrator shall notify the manufacturer that certification is revoked for that model line.

2) A revocation notice under subpar. b.1) shall become final and effective 60 days after receipt by the manufacturer, unless it is withdrawn, a hearing is requested under sub. (10) or the deadline for requesting a hearing is extended.

3) The administrator may extend the deadline for requesting a hearing for up to 60 days for good cause.

4) A manufacturer may extend the deadline for requesting a hearing for up to 6 months, by agreeing to a voluntary suspension of certification.

c. Any notification under subpar. a. or b. shall include a copy of a preliminary test report from the accredited laboratory. The accredited laboratory shall provide a preliminary test report to the administrator within 10 days of the completion of testing, if a wood heater exceeds the applicable emission limit in sub. (3). The laboratory shall provide the administrator and the manufacturer, within 30 days of the completion of testing, all documentation pertaining to the test, including the complete test report and raw data sheets,

laboratory technician notes, and test results for all test runs.

d. Upon receiving notification of a test failure under subpar. b. the manufacturer may submit some or all of the remaining 4 wood heaters selected under sub. 2. for testing at the manufacturer's own expense, in the order they were selected by the administrator, at the laboratory that performed the emissions test for the administrator.

e. Whether or not the manufacturer proceeds under subpar. d., the manufacturer may submit any relevant information to the administrator, including any other test data generated pursuant to this section. The manufacturer shall pay the expense of any testing performed for him or her.

f. The administrator shall withdraw any notice issued under subpar. b. if tests under subpar. d. show either:

1) That all 4 wood heaters tested for the manufacturer met the applicable weighted average emission limits, or

2) That the second and third wood heaters selected met the applicable weighted average emission limits and the average of all 3 weighted averages, including the original audit test, was below the applicable weighted average emission limits.

g. The administrator may withdraw any proposed revocation, if the administrator finds that an audit test failure has been rebutted by information submitted by the manufacturer under subpar. d. or e. or by any other relevant information available to the administrator.

h. Any withdrawal of a proposed revocation shall be accompanied by a document setting forth its basis.

(5) TEST METHODS AND PROCEDURES. Test methods and procedures in 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, except as provided under s. NR 440.08(2), shall be used to determine compliance with the standards and requirements for certification under subs. (3) and (4) as follows:

(a) Method 28 shall be used to establish the certification test conditions and the particulate matter weighted emission values.

(b) Emission concentrations may be measured with either:

1. Method 5G if a dilution tunnel sampling location is used, or

2. Method 5H if a stack location is used.

(c) Method 28A shall be used to determine that a wood combustion unit qualifies under the definition of wood heater in sub. (2)(a). If such a determination is necessary, this test shall be conducted by an accredited

laboratory.

(e)1. The manufacturer of an affected facility shall notify the administrator of the date that certification testing is scheduled to begin. A notice from the testing lab containing the information required in sub. (4)(f)1. may be used to satisfy this requirement. This notice shall be submitted at least 30 days before the start of testing. The notification of testing shall be in writing, and include the manufacturer's name and address, the testing laboratory's name, the model name and number or, if unavailable, some other way to distinguish between models, and the dates of testing.

2. Any emission testing conducted on the wood heater for which notice was delivered shall be presumed to be certification testing if such testing occurs on or after the scheduled date of testing and before a test report is submitted to the administrator. If certification testing is interrupted for more than 24 hours, the laboratory shall notify the administrator by telephone, as soon as practicable, and also by letter, stating why the testing was interrupted and when it is expected to be resumed.

3. A manufacturer or laboratory may change the date that testing is scheduled to begin by notifying the administrator at least 14 days before the start of testing. Notification of schedule change shall be made at least 2 working days prior to the originally scheduled test date. This notice of rescheduling shall be made by telephone or other expeditious means and shall be documented in writing and sent concurrently.

4. A model line may be withdrawn from testing before the certification test is complete, provided the wood heater is sealed in accordance with sub. (6)(g). The manufacturer shall notify the administrator 30 days before the resumption of testing.

5. The manufacturer or laboratory shall notify the administrator if a test is not completed within the time allotted as set forth in the notice of testing. The notification shall be made by the end of the allotted testing period by telephone or other expeditious means, and documented in writing sent concurrently, and shall contain the dates when the test will be resumed. Unless otherwise approved by the administrator, failure to conduct a certification test as scheduled without notifying the administrator of any schedule change 14 days prior to the schedule or revised test dates will result in voiding the notification. In the case of a voided notification, the manufacturer shall provide the administrator with a second notification at least

30 days prior to the new test dates. The administrator may waive the requirement for advance notice for test resumptions.

(f) The testing laboratory shall allow the manufacturer to observe certification testing. However, manufacturers may not involve themselves in the conduct of the test after the pretest burn (as defined by Method 28) has begun. Communications between the manufacturer and laboratory personnel regarding operation of the wood heater shall be limited to written communications transmitted prior to the first pretest burn of the certification series. Written communications between the manufacturer and laboratory personnel may be exchanged during the certification test only if deviations from the test procedures are observed that constitute improper conduct of the test. All communications shall be included in the test documentation required to be submitted under sub. (4)(b)4. and shall be consistent with instructions provided in the owner's manual required under sub. (7)(k), except to the extent that they address details of the certification tests that would not be relevant to owners.

(6) LABORATORY ACCREDITATION. (a)1. A laboratory may apply for accreditation by the administrator to conduct wood heater certifications tests pursuant to sub. (4). The application shall be in writing to: Emission Measurement Branch (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attn: Wood Heater Laboratory Accreditation.

2. If accreditation is denied under this section, the administrator shall give written notice to the laboratory setting forth the basis for the determination.

(b) In order for a test laboratory to qualify for accreditation the laboratory shall:

1. Submit its written application providing the information related to laboratory equipment and management and technical experience of laboratory personnel. Applications from laboratories shall establish that:

a. Laboratory personnel have a total of one year of relevant experience in particulate measurement, including at least 3 months experience in measuring particulate emissions from wood heaters,

b. The laboratory has the equipment necessary to perform testing in accordance with either sub. (5)(b)1. or 2., and

c. Laboratory personnel have experience in test management or laboratory management.

2. Have no conflict of interest and receive no financial benefit from the outcome of certification testing conducted pursuant to sub. (4).

3. Agree to enter into a contract as described in sub. (4)(g) with each wood heater manufacturer for whom a certification test has been performed.

5. Demonstrate proficiency to achieve reproducible results with at least one test method and procedure in sub. (5)(b) by:

a. Performing a test consisting of at least 8 test runs (2 in each of the 4 burn rate categories) on a wood heater identified by the administrator,

b. Providing the administrator at least 30 days prior notice of the test to afford the administrator the opportunity to have an observer present, and

c. Submitting to the administrator all documentation pertaining to the test including a complete test report and raw data sheets, laboratory technical notes, and test results for all test runs.

6. Be located in the continental United States.

7. Agree to participate annually in a proficiency testing program conducted by the administrator.

8. Agree to allow the administrator access to observe certification testing.

9. Agree to comply with a reporting and recordkeeping requirement that affect testing laboratories, and

10. Agree to accept the reasonable cost of a random compliance audit test (as determined by the administrator) if it is selected to conduct the random compliance audit test of a model line originally tested for certification at another laboratory.

(c) Laboratories accredited by the state of Oregon prior to January 1, 1988, may be accredited by the administrator without regard to the requirements in par. (b)1. and 5., provided that the laboratory requests the accreditation in writing and, in addition to other applicable requirements, certifies under penalty of law that the information used in obtaining Oregon accreditation satisfied applicable requirements of Oregon law.

(e)1. The administrator may revoke the U.S. environmental protection agency laboratory accreditation if he or she determines that the laboratory:

a. No longer satisfies the requirements for accreditation in par. (b) or (c),

b. Does not follow required procedures or practices,

c. Had falsified data or otherwise misrepresented emission data,

e. Failed to participate in a proficiency testing program, in accordance with its commitment under par. (b)5., or

f. Failed to seal the wood heater in accordance with par. (g).

2. Revocation of accreditation under this paragraph may not take effect until the laboratory concerned has been given written notice by the administrator setting forth the basis for the proposed determination and an opportunity for a hearing under sub. (10). However, if revocation is ultimately upheld, all tests conducted by the laboratory after written notice was given may, at the discretion of the administrator, be declared invalid.

(f) Unless revoked sooner, a certificate of accreditation granted by the administrator shall be valid:

1. For 5 years from the date of issuance, for certificates issued under par. (b), or

2. Until July 1, 1990, for certificates issued under par. (c).

(g) A laboratory accredited by the administrator shall seal any wood heater on which it performed certification tests, immediately upon completion or suspension of certification testing, by using a laboratory-specific seal.

(7) PERMANENT LABEL, TEMPORARY LABEL AND OWNER'S MANUAL. (a)1. Each affected facility manufactured on or after July 1, 1988, or offered for sale at retail on or after July 1, 1990, shall have a permanent label affixed to it that meets the requirements of this subsection.

2. Except for wood heaters subject to sub. (1)(e), (f) or (g), the permanent label shall contain the following information:

a. Month and year of manufacture,

b. Model name or number, and

c. Serial number.

3. The permanent label shall:

a. Be affixed in a readily visible or accessible location,

b. Be at least 3 1/2 inches long and 2 inches wide,

c. Be made of a material expected to last the lifetime of the wood heater,

d. Present required information in a manner so that it is likely to remain legible for the lifetime of the wood heater, and

e. Be affixed in such a manner that it cannot be removed from the appliance without damage to the label.

4. The permanent label may be combined with any other label, as long as the required information is displayed, and the integrity of the permanent label is

not compromised.

(b) If the wood heater belongs to a model line certified under sub. (4) and has not been found to exceed the applicable emission limits or tolerances through quality assurance testing, one of the following statements, as appropriate, shall appear on the permanent label:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Certified to comply with July, 1988,
particulate emission standards
Not approved for sale after June 30, 1992,

or

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Certified to comply with July, 1990,
particulate emission standards.

(c)1. If compliance is demonstrated under sub. (1)(c), the following statement shall appear on the permanent label:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Certified under s. NR 440.642(1)(c), Wis. Adm. Code.
Not approved for sale after June 30, 1992.

2. If compliance is demonstrated under sub. (4)(h) one of the following statements, as appropriate, shall appear on the permanent label:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES.
Certified under s. NR 440.642(4)(h), Wis. Adm. Code,
to comply with July, 1988 particulate emissions standards.
Not approved for sale after June 30, 1992.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Certified under s. NR 440.642(4)(h), Wis. Adm. Code,
to comply with July, 1990 particulate emissions standards.

(d) Any label statement under par. (b) or (c) constitutes a representation by the manufacturer as to any wood heater that bears it that:

1. Certification was in effect at the time the wood heater left the possession of the manufacturer,

2. The manufacturer was, at the time the label was affixed, conducting a quality assurance program in conformity with sub. (4)(o),

3. As to any wood heater individually tested for emissions by the manufacturer under sub. (4)(o)3., that it met the applicable emissions limits, and

4. As to any wood heater individually inspected for tolerances under sub. (4)(o)2., that the wood heater is within applicable tolerances.

(e) If an affected facility is exempt from the emission limits in sub. (3) under the provisions of sub. (1)(d), the following statement shall appear on the permanent label:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Not certified. Approved for sale until June 30, 1991.

(f)1. If an affected facility is manufactured in the state of Wisconsin for export, the following statement shall appear on the permanent label:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Export stove. May not be operated
within the United States.

2. If an affected facility is manufactured for use for research and development purposes as provided in sub. (1)(f), the following statement shall appear on the permanent label:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Not certified. Research Stove.
Not approved for sale.

3. If an affected facility is a coal-only heater as defined in sub. (1), the following statement shall appear on the permanent label:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
This heater is only for burning coal.
Use of any other solid fuel except for
coal ignition purposes is a violation of law.

(g) Any affected facility that does not qualify for labeling under any of pars. (b) through (f), shall bear one of the following labels:

1. If the test conducted under sub. (4)(n) indicates that the facility does not meet applicable emissions limits:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES.
Not certified. Does not meet
DNR particulate emission standards.
IT IS AGAINST THE LAW TO OPERATE THIS WOOD HEATER.

2. If the test conducted under sub. (4)(n) indicates that the facility does meet applicable emissions limits:

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Not certified. Meets DNR particulate emission standards.

3. If the facility has not been tested as required by sub. (4)(e).

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES.
Not certified. Not tested. Not approved for sale.
IT IS AGAINST THE LAW TO OPERATE THIS WOOD HEATER.

(h) For affected facilities equipped with catalytic combustors, the following statement shall appear on the permanent label:

This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. Consult owner's manual for further information. It is against the law to operate this wood heater in a manner inconsistent with operating instructions in the owner's manual or if the catalytic element is deactivated or removed.

(i) An affected facility permanently labeled under par. (b) or (c) shall have attached to it a temporary label that shall contain only the following:

1. A statement indicating the compliance status of the model. The statement shall be one of the statements provided in 40 C.F.R. pt. 60, Appendix I, Section 2.2.1., incorporated by reference in s. NR 440.17. Instructions on the statement to select are provided in 40 C.F.R. pt. 60 in Appendix I, incorporated by reference in s. NR 440.17.

2. A graphic presentation of the composite particulate matter emission rate as determined in the certification test, or as determined by the administrator if the wood heater is certified under sub. (1)(c). The method for presenting this information is provided in 40 C.F.R. pt. 60, Appendix I, Section 2.2.2., incorporated by reference in s. NR 440.17.

3. A graphic presentation of the overall thermal efficiency of the model. The method for presenting this information is provided in 40 C.F.R. pt. 60, Appendix I, Section 2.2.3., incorporated by reference in s. NR 440.17. At the discretion of the manufacturer, either the actual measured efficiency of the model or its estimated efficiency may be used for purposes of this paragraph. The actual efficiency is the efficiency measured in tests conducted pursuant to sub. (5)(d). The estimated efficiency shall be 72% if the model is catalyst-equipped and 63% if the model is not catalyst equipped, and 78% if the model is designed to burn wood pellets for fuel. Wood heaters certified under sub. (1)(c) shall use these estimated efficiencies.

4. A numerical expression of the heat output range of the unit, in British thermal units per hour (Btu/hr) rounded to the nearest 100 Btu/hr.

a. If the manufacturer elects to report the overall efficiency of the model based on test results pursuant to par. (l)3., the manufacturer shall report the heat output range measured during the efficiency test. If an accessory device is used in the certification test to achieve any low burn rate criterion specified in this section, and if this accessory device is not sold as a part of the wood heater, the heat output range shall be determined using the formula in par. (l)4.b. based upon the lowest sustainable burn rate achieved without the accessory device.

b. If the manufacturer elects to use the estimated efficiency as provided in par. (i)3., the manufacturer shall estimate the heat output of the model as follows:

$$HO_E = (19.140) \quad (\text{Estimated overall efficiency}/100) \quad BR$$

where:

HO_E = Estimated heat output in Btu/hr

BR = Burn rate in dry kilograms of test fuel per hour

5. Statements regarding the importance of operation and maintenance. Instructions regarding which statements shall be used are provided in 40 C.F.R. pt. 60, Appendix I, Section 2., incorporated by reference in s. NR 440.17; and

6. The manufacturer and the identification of the model.

(j)1. An affected facility permanently labeled under par. (e), (f)3. or (g) shall have attached to it a temporary label that shall contain only the information provided for in 40 C.F.R. pt. 60, Appendix I, section 2.3, 2.4 or 2.5, as applicable, incorporated by reference in s. NR 440.17.

2. The temporary label of an affected facility permanently labeled under par. (b), (c), (e), (f)3. or (g) shall:

a. Be affixed to a location on the wood heater that is readily seen and accessible when the wood heater is offered for sale to consumers by any commercial owner;

b. Not be combined with any other label or information;

c. Be attached to the wood heater in such a way that it can be easily removed by the consumer upon purchase, except that the label on wood heaters

displayed by a commercial owner may have an adhesive backing or other means to preserve the label to prevent its removal or destruction;

d. Be printed on 90 pound bond paper in black ink with a white background except that those for models that are not otherwise exempted which do not meet the applicable emission limits, or have not been tested pursuant to this section, shall be on a red background as described in 40 C.F.R. pt. 60, Appendix I, Section 2.5, incorporated by reference in s. NR 440.17;

e. Have dimensions of 5 inches by 7 inches as described in 40 C.F.R. pt. 60, Appendix I, Section 2.1, incorporated by reference in s. NR 440.17;

f. Have wording, presentation of the graphic data, and typography as presented in 40 C.F.R. pt. 60, Appendix I, incorporated by reference in s. NR 440.17.

(k)1. Each affected facility offered for sale by a commercial owner shall be accompanied by an owner's manual that shall contain the information listed in subds. 2. (pertaining to installation) and 3. (pertaining to operation and maintenance). The information shall be adequate to enable consumers to achieve optimal emissions performance. The information shall also be consistent with the operating instructions provided by the manufacturer to the laboratory for operating the wood heater during certification testing, except for details of the certification test that would not be relevant to the ultimate purchaser.

2. Installation information in the owner's manual shall state the requirements for achieving proper draft.

3. Operation and maintenance information in the owner's manual shall include:

a. Wood loading procedures, recommendations on wood selection, and warnings on what fuels not to use, such as treated wood, colored paper, cardboard, solvents, trash and garbage,

b. Fire starting procedures,

c. Proper use of air controls,

d. Ash removal procedures,

e. Instructions on gasket replacement,

f. For catalytic models, information on the following pertaining to the catalytic combustor:

1) Procedures for achieving and maintaining catalyst activity,

2) Maintenance procedures,

3) Procedures for determining deterioration or failure,

4) Procedures for replacement, and

5) Information on how to exercise warranty rights, and

g. For catalytic models, the following statement:

This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. It is against the law to operate this wood heater in a manner inconsistent with operating instructions in this manual, or if the catalytic element is deactivated or removed.

4. Any manufacturer using the model language contained in 40 C.F.R. pt. 60, Appendix I, incorporated by reference in s. NR 440.17, to satisfy any requirement of this paragraph shall be in compliance with that requirement, provided that the particular model language is printed in full, with only such changes as are necessary to ensure accuracy for the particular model line.

(1) Wood heaters that are affected by this section but that have been owned and operated by a noncommercial owner, are not subject to pars. (j) and (k) when offered for resale.

(8) REPORTING AND RECORDKEEPING. (a) Each manufacturer who holds a certificate of compliance under sub. (4)(e) or (h) for a model line shall maintain records containing the information required by this paragraph with respect to that model line. Each manufacturer of a model line certified under sub. (1)(c) shall maintain the information required by subds. 2. and 4. for that model line. The records and information maintained shall include:

1. For certification tests:

a. All documentation pertaining to the certification test used to obtain certification, including the full test report and raw data sheets, laboratory technician notes, calculations, and the test results for all test runs.

b. Where a model line is certified under sub. (4)(h) and later certified under sub. (4)(e), all documentation pertaining to the certification test used to obtain certification in each instance.

2. For parameter inspections conducted pursuant to sub. (4)(o)2., information indicating the extent to which tolerances for components that affect emissions as listed in sub. (4)(k)2. were inspected, and at what frequency, the results of such inspections, remedial actions taken, if any, and any follow-up actions such as additional inspections.

3. For emissions tests conducted pursuant to sub. (4)(o)3., all test reports, data sheets, laboratory technician notes, calculations, and test results for all test runs, the remedial actions taken, if any, and any follow-up actions such as additional testing.

4. The number of affected facilities that are sold each year, by certified model line.

(b)1. Each accredited laboratory shall maintain records consisting of all documentation pertaining to each certification test, including the full test report and raw data sheets, technician notes, calculations, and the test results for all test runs.

2. Each accredited laboratory shall report to the administrator by the 8th day of each month prior to July 1, 1990:

a. The number and identification of wood heaters scheduled for testing and the type of testing (e.g., U.S. environmental protection agency certification, Oregon certification, research and development testing),

b. The estimated date on which certification testing could commence for a wood heater, if such a test were requested on the first day of that month,

c. The identification of the wood heaters tested during the previous month.

3. Each accredited laboratory shall report to the administrator within 24 hours whenever a manufacturer which has notified the laboratory that it intends to apply for alternative certification for a model line fails to submit on schedule a representative unit of that model line for certification testing.

(c) Any wood heater upon which certification tests were performed based upon which certification was granted under sub. (4)(e) shall be retained (sealed and unaltered) at the manufacturer's facility for as long as the model line in question is manufactured. Any such wood heater shall be made available upon request to the administrator for inspection and testing.

(e) Any manufacturer seeking exemption under sub. (1)(d) shall maintain wood heater production records covering the period July 1, 1987 to July 1, 1989.

(f) Each manufacturer of an affected facility certified under sub. (4) shall submit a report to the administrator every 2 years following issuance of a certificate of compliance for each model line. This report shall certify that no changes in the design or manufacture of this model line have been made that require recertification under sub. (4)(k).

(g) Each manufacturer shall maintain records of the model and number of wood heaters exempted under sub. (1)(f).

(h) Each commercial owner of a wood heater previously owned by a noncommercial owner for personal use shall maintain records of the name and address of the previous owner.

(i)1. Unless otherwise specified, all records required under this section shall be maintained by the manufacturer or commercial owner of the affected facility for a period of no less than 5 years.

2. Unless otherwise specified, all reports to the administrator required under this section shall be made to: Stationary Source Compliance Division (EN-341), U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460 Attention: Wood Heater Program.

3. A report to the administrator required under this section shall be deemed to have been made when it is properly addressed and mailed, or placed in the possession of a commercial courier service.

(9) PROHIBITIONS. (a) No person may operate an affected facility that does not have affixed to it a permanent label pursuant to sub. (7)(b), (c), (e), (f)2. or 3., or (g)2.

(b) No manufacturer may advertise for sale, offer for sale, or sell an affected facility that:

1. Does not have affixed to it a permanent label pursuant to sub. (7), or

2. Has not been tested when required by sub. (4)(n).

(c) On or after July 1, 1990, no commercial owner may advertise for sale, offer for sale, or sell an affected facility that does not have affixed to it a permanent label pursuant to sub. (7)(b), (c), (e), (f)1. or 3., or (g)1. or 2. No person may advertise for sale, offer for sale, or sell an affected facility labeled under sub. (7)(f)1. except for export.

(d)1. No commercial owner may advertise for sale, offer for sale or sell an affected facility permanently labeled under sub. (7)(b) or (c) unless:

a. The affected facility has affixed to it a removable label pursuant to sub. (7),

b. Any purchaser or transferee is provided with an owner's manual pursuant to sub. (7)(k), and

c. Any purchaser or transferee is provided with a copy of the catalytic combustor warranty (for affected facilities with catalytic combustors).

2. No commercial owner may advertise for sale, offer for sale, or sell an affected facility permanently labeled under sub. (7)(e), (f)3., or (g), unless the affected facility has affixed to it a removable label pursuant to sub. (7).

This prohibition does not apply to wood heaters affected by this section that have been previously owned and operated by a noncommercial owner.

3. A commercial owner other than a manufacturer complies with the requirements of this paragraph if the commercial owner:

a. Receives the required documentation from the manufacturer or a previous commercial owner, and

b. Provides that documentation unaltered to any person to whom the wood heater that it covers is sold or transferred.

(e) In any case in which the administrator revokes a certificate of compliance for the knowing submission of false or inaccurate information, or other fraudulent acts, the administrator may give notice of that revocation and the grounds for it to all commercial owners. From and after the date of receipt of that notice no commercial owner may sell any wood heater covered by the revoked certificate (other than to the manufacturer) unless:

1. The wood heater has been tested as required by sub. (4)(n) and labeled as required by sub. (7)(g), or

2. The model line has been recertified in accordance with this section.

(f) No person may install or operate an affected facility except in a manner consistent with the instructions on its permanent label and in the owner's manual pursuant to sub. (7)(l).

(g) No person may operate an affected facility which was originally equipped with a catalytic combustor if the catalytic element is deactivated or removed.

(h) No person may operate an affected facility that has been physically altered to exceed the tolerance limits of its certificate of compliance.

(i) No person may alter, deface, or remove any permanent label required to be affixed pursuant to sub. (7).

(10) HEARING AND APPEAL PROCEDURES. (a)1. Any manufacturer or laboratory affected by an action listed in this subdivision may request a hearing under this subsection within 30 days following receipt of the required notification of the action when the administrator:

a. Denies an application under sub. (1)(c) or (4)(e),

b. Issues a notice of revocation of certification under sub. (4)(l),

c. Denies an application for laboratory accreditation under sub. (6), or

d. Issues a notice of revocation of laboratory accreditation under sub. (6)(e).

2. When the administrator issues a notice of revocation under sub. (4)(p), the manufacturer may request a hearing under this subsection within the time limits in sub. (4)(p)5.

(b) Any hearing request shall be in writing, shall be signed by an authorized representative of the petitioning manufacturer or laboratory, and shall include a statement setting forth with particularity the petitioner's objection to the administrator's determination or proposed determination.

(c)1. Upon receipt of a request for a hearing under par. (a), the administrator shall request the chief administrative law judge to designate an administrative law judge as presiding officer for the hearing. If the chief administrative law judge replies that no administrative law judge is available to perform this function, the administrator shall designate a presiding officer who has not had any prior responsibility for the matter under review, and who is not subject to the direct control or supervision of someone who has had such responsibility.

2. The hearing shall commence as soon as practicable at a time and place fixed by the presiding officer.

3.a. A motion for leave to intervene in any proceeding conducted under this section shall set forth the grounds for the proposed intervention, the position and interest of the movant and the likely impact that intervention will have on the expeditious progress of the proceeding. Any person already a party to the proceeding may file an answer to a motion to intervene, making specific reference to the factors in the foregoing sentence and subpar. c. within 10 days after service of the motion for leave to intervene.

b. A motion for leave to intervene in a proceeding shall ordinarily be filed before the first prehearing conference or in the absence of a prehearing conference, prior to the setting of a time and place for a hearing. Any motion filed after that time shall include, in addition to the information in subpar. a., a statement of good cause for the failure to file in a timely manner. The intervenor shall be bound by any agreements, arrangements and other matters previously made in the proceeding.

c. A motion for leave to intervene may be granted only if the movant demonstrates that his or her presence in the proceeding would not unduly prolong or otherwise prejudice the adjudication of the rights of the original parties, and that movant may be adversely affected by a final order. The intervenor shall become a full party to the proceeding upon the granting of leave to

intervene.

d. Persons not parties to the proceeding may move for leave to file amicus curiae briefs. The movant shall state his or her interest and the reasons why the proposed amicus brief is desirable. If the motion is granted, the presiding officer or administrator shall issue an order setting the time for filing such brief. An amicus curia may participate in any briefing after his or her motion is granted, and shall be served with all briefs, reply briefs, motions and orders relating to issues to be briefed.

4. In computing any period of time prescribed or allowed in this section, the day of the event from which the designated period begins to run may not be included. Saturdays, Sundays, and federal legal holidays shall be included. When a stated time expires on a Saturday, Sunday or legal holiday, the stated time period shall be extended to include the next business day.

(d)1. Upon appointment, the presiding officer shall establish a hearing file. The file shall consist of the notice issued by the administrator under sub. (1)(c), (4)(e), (1) or (p), or (6)(a) or (e), together with any accompanying material, the request for a hearing and the supporting data submitted therewith, and all documents relating to the request for certification or accreditation, or the proposed revocation of either.

2. The hearing file shall be available for inspection by any party, to the extent authorized by law, at the office of the presiding officer or other place designated.

(e) Any party may appear in person, or may be represented by counsel or by any other duly authorized representative.

(f)1. The presiding officer, upon the request of any party, or at his or her discretion, may order a prehearing conference at a time and place specified to consider the following:

a. Simplification of the issues,

b. Stipulations, admissions of fact, and the introduction of documents,

c. Limitation of the number of expert witnesses,

d. Possibility of agreement disposing of all or any of the issues in dispute,

e. Such other matters as may aid in the disposition of the hearing, including such additional tests as may be agreed upon by the parties.

2. The results of the conference shall be reduced to writing by the presiding officer and made part of the record.

(g)1. Hearings shall be conducted by the presiding officer in an informal but orderly and expeditious manner. The parties may offer oral or written evidence, subject to the exclusion by the presiding officer of irrelevant, immaterial and repetitious evidence.

2. Witnesses will not be required to testify under oath. However, the presiding officer shall call to the attention of witnesses that their statements may be subject to penalties under 18 U.S.C. 1001 for knowingly making false statements or representations or using false documents in any matter within the jurisdiction of any department or agency of the United States.

3. Any witness may be examined or cross-examined by the presiding officer, the parties, or their representatives.

4. Hearings shall be recorded verbatim. Copies of transcripts of proceedings may be purchased by the applicant from the reporter.

5. All written statements, charts, tabulations, and similar data offered in evidence at the hearings shall, upon a showing satisfactory to the presiding officer of their authenticity, relevancy, and materiality, be received in evidence and shall constitute a part of the record.

(h)1. The presiding officer shall make an initial decision which shall include a written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the record. The findings, conclusions, and written decision shall be provided to the parties and made a part of the record. The initial decision shall become the decision of the administrator without further proceedings unless there is an appeal to the administrator or motion for review by the administrator. Except as provided in subd. 3., any such appeal shall be taken within 20 days of the date the initial decision was filed.

2. On appeal from or review of the initial decision the administrator shall have all the powers which he or she would have in making the initial decision including the discretion to require or allow briefs, oral argument, the taking of additional evidence or the remanding to the presiding officer for additional proceedings. The decision by the administrator shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the appeal or considered in the review.

3. In any hearing requested under par. (a)2., the presiding officer shall render his initial decision within 60 days of that request. Any appeal to the administrator shall be taken within 10 days of the initial decision, and the

administrator shall render his decision in that appeal within 30 days of the filing of the appeal.

(11) GENERAL PROVISIONS EXCLUSIONS. The following provisions of ch. NR 440 do not apply to this section:

(a) Section NR 440.07

(b) Section NR 440.08(1), (3), (4), (5) and (6), and

(c) Section NR 440.15(4).

SECTION 134. NR 440.644 is created to read:

NR 440.644 RUBBER TIRE MANUFACTURING INDUSTRY. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITIES. (a) The provisions of this section apply to the following affected facilities in rubber tire manufacturing plants: each undertread cementing operation, each sidewall cementing operation, each tread end cementing operation, each bead cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation.

(b) The provisions of this section apply to each facility identified in par. (a) that commences construction or modification after January 20, 1983.

(c) Although the affected facilities listed under par. (a) are defined in reference to the production of components of a "tire", as defined under sub. (2)(a), the percent emission reduction requirements and VOC use cutoffs specified under sub. (3)(a)1., 2., 6., 7.c. and d., 8., 9. and 10. refer to the total amount of VOC used (the amount allocated to the affected facility), including the VOC used in cements and organic solvent-based green tire spray materials for tire types not listed in the definition of "tire".

(2) DEFINITIONS AND SYMBOLS. (a) As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02.

1. "Bead" means rubber-covered strands of wire, wound into a circular form, which ensure a seal between a tire and the rim of the wheel onto which the tire is mounted.

2. "Bead cementing operation" means the system that is used to apply cement to the bead rubber before or after it is wound into its final circular form. A bead cementing operation consists of a cement application station, such as a dip tank, spray booth and nozzles, cement trough and roller or swab applicator, and all other equipment necessary to apply cement to wound beads or bead rubber and to allow evaporation of solvent from cemented beads.

3. "Component" means a piece of tread, combined tread/sidewall, or separate sidewall rubber, or other rubber strip that is combined into the sidewall of a finished tire.

4. "Drying area" means the area where VOC from applied cement or green tire sprays is allowed to evaporate.

5. "Enclosure" means a structure that surrounds a VOC (cement, solvent, or spray) application area and drying area, and that captures and contains evaporated VOC and vents it to a control device. Enclosures may have permanent and temporary openings.

6. "Green tire" means an assembled, uncured tire.

7. "Green tire spraying operation" means the system used to apply a mold release agent and lubricant to the inside and outside of green tires to facilitate the curing process and to prevent rubber from sticking to the curing press. A green tire spraying operation consists of a booth where spraying is performed, the spray application station, and related equipment such as the lubricant supply system.

8. "Michelin-A operation" means the operation identified as Michelin-A in the emission standards and engineering division confidential file as referenced in Docket A-80-9, Entry II-B-12.

9. "Michelin-B operation" means the operation identified as Michelin-B in the emission standards and engineering division confidential file as referenced in Docket A-80-9, Entry II-B-12.

10. "Michelin-C-automatic operation" means the operation identified as Michelin-C-automatic in the emission standards and engineering division confidential file as referenced in Docket A-80-9, Entry II-B-12.

11. "Month" means a calendar month or a prespecified period of 28 days or 35 days (utilizing a 4-4-5-week recordkeeping and reporting schedule).

12. "Organic solvent-based green tire spray" means any mold release agent and lubricant applied to the inside or outside of green tires that contains more than 12%, by weight, of VOC, as sprayed.

13. "Permanent opening" means an opening designed into an enclosure to allow tire components to pass through the enclosure by conveyor or other mechanical means, to provide access for permanent mechanical or electrical equipment, or to direct air flow into the enclosure. A permanent opening is not equipped with a door or other means of obstruction of air flow.

14. "Sidewall cementing operation" means the system used to apply cement to a continuous strip of sidewall component or any other continuous strip component (except combined bead/sidewall component) that is incorporated into the sidewall of a finished tire. A sidewall cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to sidewall strips or other continuous strip component (except combined tread/sidewall component) and to allow evaporation of solvent from the cemented rubber.

15. "Temporary opening" means an opening into an enclosure that is equipped with a means of obstruction, such as a door, window, or port, that is normally closed.

16. "Tire" means any agricultural, airplane, industrial, mobile home, light-duty truck or passenger vehicle tire that has a bead diameter less than or equal to 0.5 m (19.7 in) and a cross section dimension less than or equal to 0.325 m (12.8 in), and that is mass produced in an assembly-line fashion.

17. "Tread end cementing operation" means the system used to apply cement to one or both ends of the tread or combined tread/sidewall component. A tread end cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread ends and to allow evaporation of solvent from the cemented tread ends.

18. "Undertread cementing operation" means the system used to apply cement to a continuous strip of tread or combined tread/sidewall component. An undertread cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread or combined tread/sidewall strips and to allow evaporation of solvent from the cemented tread or combined tread/sidewall.

19. "VOC emission control device" means equipment that destroys or recovers VOC.

20. "VOC emission reduction system" means a system composed of an enclosure, hood, or other device for containment and capture of VOC emissions and a VOC emission control device.

21. "Water-based green tire spray" means any mold release agent and lubricant applied to the inside or outside of green tires that contains 12% or less, by weight, of VOC as sprayed.

(b) As used in this section, symbols not defined in this subsection have the meanings given in s. NR 440.03.

B_o = total number of beads cemented at a particular bead cementing affected facility for a month

C_a = concentration of VOC in gas stream in vents after a control device (parts per million by volume)

C_b = concentration of VOC in gas steam in vents before a control device (parts per million by volume)

C_f = concentration of VOC in each gas stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (parts per million by volume)

D_c = density of cement or spray material (grams per liter)

D_r = density of VOC recovered by an emission control device (grams per liter)

E = emission control device efficiency, inlet versus outlet (fraction)

F_c = capture efficiency, VOC capture and routed to one control device versus total VOC used for an affected facility (fraction)

F_o = fraction of total mass of VOC used in a month by all facilities served by a common cement or spray material distribution system that is used by a particular affected facility served by the common distribution system

G = monthly average mass of VOC used per tire cemented or sprayed with a water-based green tire spray for a particular affected facility (grams per tire)

G_b = monthly average mass of VOC used per bead cemented for a particular bead cementing affected facility (grams per bead)

L_c = volume of cement or spray material used for a month (liters)

L_r = volume of VOC recovered by an emission control device for a month (liters)

M = total mass of VOC used for a month by all facilities served by a common cement or spray material distribution system (grams)

M_o = total mass of VOC used at an affected facility for a month (grams)

M_r = mass of VOC recovered by an emission control device for a month (grams)

N = mass of VOC emitted to the atmosphere per tire cemented or sprayed with a water-based green tire spray for an affected facility for a month (grams per tire)

N_b = mass of VOC emitted per bead cemented for an affected facility for a month (grams per bead)

Q_a = volumetric flow rate in vents after a control device (dry standard cubic meters per hour)

Q_b = volumetric flow rate in vents before a control device (dry standard cubic meters per hour)

Q_r = volumetric flow rate of each stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (dry standard cubic meters per hour)

R = overall efficiency of an emission reduction system (fraction)

T_d = total number of days in monthly compliance period (days)

T_o = total number of tire cemented or sprayed with water-based green tire sprays at a particular affected facility for a month

W_o = weight fraction of VOC in a cement or spray material.

(3) STANDARDS FOR VOLATILE ORGANIC COMPOUNDS. (a) On and after the date on which the initial performance test, required by s. NR 440.08, is completed, but no later than 180 days after initial startup, each owner or operator subject to the provisions of this section shall comply with the following conditions:

1. For each undertread cementing operation:

a. Discharge into the atmosphere no more than 25% of the VOC used (75% emission reduction) for each month; or

b. Maintain total (uncontrolled) VOC use less than or equal to the following levels, depending upon the duration of the compliance period:

1) 3,870 kilograms of VOC per 28 days,

2) 4,010 kilograms of VOC per 29 days,

3) 4,150 kilograms of VOC per 30 days,

4) 4,280 kilograms of VOC per 31 days, or

5) 4,840 kilograms of VOC per 35 days.

2. For each sidewall cementing operation:

a. Discharge into the atmosphere no more than 25% of the VOC used (75% emission reduction) for each month; or

b. Maintain total (uncontrolled) VOC use less than or equal to the following levels, depending upon the duration of the compliance period:

1) 3,220 kilograms of VOC per 28 days,

2) 3,3450 kilograms of VOC per 29 days,

3) 3,450 kilograms of VOC per 30 days,

4) 3,570 kilograms of VOC per 31 days, or

5) 4,030 kilograms of VOC per 35 days.

3. For each tread end cementing operation: Discharge into the atmosphere no more than 10 grams of VOC per tire (g/tire) cementing for each month.

4. For each bead cementing operation: Discharge into the atmosphere no more than 5 grams of VOC per bead (g/bead) cemented for each month.

5. For each green tire spraying operation where only water-based sprays are used:

a. Discharge into the atmosphere no more than 1.2 grams of VOC per tire sprayed with an inside green tire spray for each month; and

b. Discharge into the atmosphere no more than 9.3 grams of VOC per tire sprayed with an outside green tire spray for each month.

6. For each green tire spraying operation where only organic solvent-based sprays are used:

a. Discharge into the atmosphere no more than 25% of the VOC used (75% emission reduction) for each month; or

b. Maintain total (uncontrolled) VOC use less than or equal to the following levels, depending upon the duration of the compliance period:

1) 3,220 kilograms of VOC per 28 days,

2) 3,340 kilograms of VOC per 29 days,

3) 3,450 kilograms of VOC per 30 days,

4) 3,570 kilograms of VOC per 31 days, or

5) 4,030 kilograms of VOC per 35 days.

7. For each green tire spraying operation where both water-based and organic solvent-based sprays are used:

a. Discharge into the atmosphere no more than 1.2 grams of VOC per tire sprayed with a water-based inside green tire spray for each month; and

b. Discharge into the atmosphere no more than 9.3 grams of VOC per tire sprayed with a water-based outside green tire spray for each month; and either

c. Discharge into the atmosphere no more than 25% of the VOC used in the organic solvent-based green tire sprays (75% emission reduction) for each month; or

d. Maintain total (uncontrolled) VOC use for all organic solvent-based green tire sprays less than or equal to the levels specified under subd. 6. b.

8. For each Michelin-A operation:

a. Discharge into the atmosphere no more than 35% of the VOC used (65% emission reduction) for each month; or

b. Maintain total (uncontrolled) VOC use less than or equal to the following levels, depending upon the duration of the compliance period:

1) 1,570 kilograms of VOC per 28 days,

2) 1,630 kilograms of VOC per 29 days,

3) 1,690 kilograms of VOC per 30 days,

4) 1,740 kilograms of VOC per 31 days,

5) 1,970 kilograms of VOC per 35 days.

9. For each Michelin-B operation:

a. Discharge into the atmosphere no more than 25% of the VOC used (75% emission reduction) for each month; or

b. Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

1) 1,310 kilograms of VOC per 28 days,

2) 1,360 kilograms of VOC per 29 days,

3) 1,400 kilograms of VOC per 30 days,

4) 1,450 kilograms of VOC per 31 days, or

5) 1,640 kilograms of VOC per 35 days.

10. For each Michelin-C automatic operation:

a. Discharge into the atmosphere no more than 35% of the VOC used (65% emission reduction) for each month; or

b. Maintain total (uncontrolled) VOC use less than or equal to the levels specified under par. (a) 8. b.

(4) PERFORMANCE TEST AND COMPLIANCE PROVISIONS. (a) Section NR 440.08(4) does not apply to the monthly performance test procedures required by this section. Section NR 440.08(4) does apply to initial performance tests and to the performance tests specified under par. (b)2. and 3. Section NR 440.08(6) does not apply when Method 24 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, is used.

(b) Performance tests shall be conducted as follows:

1. The owner or operator of an affected facility shall conduct an initial performance test, as required under s. NR 440.08(1), except as described under par. (j). The owner or operator of an affected facility shall thereafter conduct a performance test each month except as described under pars. (g)1. and (j). Initial and monthly performance tests shall be conducted according to the procedures in this subsection.

2. The owner or operator of an affected facility who elects to use a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), as described under pars. (f) and (g), shall repeat the performance test when directed by the department or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of overall reduction efficiency. The performance test shall be conducted in accordance with the procedures described under par. (f)2.a. to c.

3. The owner or operator of an affected facility who seeks to comply with the equipment design and performance specifications, as described under par. (j), shall repeat the performance test when directed by the department or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of control device efficiency or measurement of capture system retention time or face velocity. The performance test shall be conducted in accordance with the procedures described under par. (f)2.b.

(c) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C automatic operation where the owner or operator seeks to comply with the uncontrolled monthly VOC use (kg/mo) limits, the owner or operator shall use the following procedure to determine compliance with the applicable (depending upon duration of compliance period) uncontrolled monthly VOC use limit specified under sub. (3)(a)1.b., 2.b., 6.b., 7.d., 8.b., 9.b. and 10.b. If both undertread cementing and sidewall cementing are performed at the same affected facility during a month, then the kg/mo limit specified under sub. (3)(a)1.b. shall apply for that month.

1. Determine the density and weight fraction VOC (including dilution VOC) of each cement or green tire spray from its formulation or by analysis of the cement of green tire spray using Method 24 of Appendix A of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17. If a dispute arises, the department may require an owner or operator who used formulation data to analyze the cement or green tire spray using Method 24 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17.

2. Calculate the total mass of VOC used at the affected facility for the month (M_o) by the following procedure:

a. For each affected facility for which cement or green tire spray is delivered in batch or via a distribution system that serves only the affected facility:

$$M_o = \sum_{i=1}^{a} L_c \; D_c \; W_p \quad _i$$

where "a" equals the number of different cements or green tire sprays used during the month that are delivered in batch or via a distribution system that serves only a single affected facility.

b. For each affected facility for which cement or green tire spray is delivered via a common distribution system that also serves other affected or existing facilities:

1) Calculate the total mass of VOC used for all of the facilities served by the common distribution system for the month (M):

$$M = \sum_{i=1}^{b} L_{c\,i} D_c \; W_o \quad _i$$

where "b" equals the number of different cements or green tire sprays used during the month that are delivered via a common distribution system that also serves other affected or existing facilities.

2) Determine the fraction (F_o) of M used at the affected facility by comparing the production records and process specifications for the material cemented or sprayed at the affected facility for the month to the production records and process specifications for the material cemented or sprayed at all other facilities served by the common distribution system for the month or by another procedure acceptable to the administrator.

3) Calculate the total monthly mass of VOC used at the affected facility for the month (M_o):

$$M_o = MF_o$$

3. Determine the time duration of the monthly compliance period (T_d).

(d) For each tread end cementing operation and each green tire spraying operation where water-based sprays are used (inside or outside) that do not use

a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the g/tire limit specified under sub. (3)(a)3., 5.a. and b., and 7.a. and b.

1. Determine the density and weight fraction VOC as specified under par. (c)1.

2. Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under par. (c)2.

3. Determine the total number of tires cemented or sprayed at the affected facility for the month (T_o) by the following procedure:

a. For a tread end cementing operation, T_o equals the number of tread or combined tread/sidewall components that receive an application of tread end cement for the month.

b. For a green tire spraying operation that uses water-based inside green tire sprays, T_o equals the number of green tires that receive an application of water-based inside green tire spray for the month.

c. For a green tire spraying operation that uses water-based outside green tire sprays, T_o equals the number of green tires that receive an application of water-based outside green tire spray for the month.

4. Calculate the mass of VOC used per tire cemented or sprayed at the affected facility for the month (G):

$$G = \frac{M_o}{T_o}$$

5. Calculate the mass of VOC emitted per tire cemented or sprayed at the affected facility for the month (N):

$$N = G$$

(e) For each bead cementing operation that does not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the g/bead limit specified under sub. (3)(a)4.

1. Determine the density and weight fraction of VOC as specified under par. (c)1.

2. Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under par. (c)2.

3. Determine the number of beads cemented at the affected facility during the month (B_o) using production records; B_o equals the number of beads that receive an application of cement for the month.

4. Calculate the mass of VOC used per bead cemented at the affected facility for the month (G_b):

$$G_b = \frac{M_o}{B_o}$$

5. Calculate the mass of VOC emitted per bead cemented at the affected facility for the month (N_b):

$$N_b = G_b$$

(f) For each tread end cementing operation and each bead cementing operation that use a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under sub. (3)(a)3. and 4.

1. Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under par. (e)1. to 4., or mass of VOC used per bead cemented at the affected facility for the month (G_b), as specified under par. (e)1. to 4.

2. Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemented for the affected facility for the month (N_b):

$$N = G(1-R)$$

$$N_b = G_b(1-R)$$

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under par. (f)2.a. to c. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test except during conditions described under par. (b)2.

a. The owner or operator of an affected facility shall construct a temporary enclosure around the application and drying areas during he performance test for the purpose of capturing fugitive VOC emissions. The enclosure shall be maintained at a negative pressure to ensure that all evaporated VOC are measurable. Determine the fraction (F_c) of total VOC used at the affected facility that enter the control device:

$$F_c = \frac{\sum_{i=1}^{m} C_{b\,i} Q_{b\,i}}{\sum_{i=1}^{m} C_{b\,i} Q_{b\,i} + \sum_{i=1}^{n} C_{f\,i} Q_{f\,i}}$$

where:

"m" is the number of vents from the affected facility to the control device

"n" is the number of vents from the affected facility to the atmosphere and form the temporary enclosure

b. Determine the destruction efficiency of the control device (E) by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of control device:

$$E = \frac{\sum_{i=1}^{m} C_{b\,i} Q_{b\,i} - \sum_{i=1}^{p} C_{a} Q_{a\,i}}{\sum_{i=1}^{m} C_{b\,i} Q_{b\,i}}$$

where:

"m" is the number of vents from the affected facility to the control device

"p" is the number of vents after the control device

c. Determine the overall reduction efficiency (R):

$$R = EF_{c}$$

(g) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that use a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the percent emission reduction requirement specified under sub. (3)(a)1.a., 2.a., 6.a., 7.c., 8.a., 9.a. and 10.a. For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under par. (f)2.a. to c. The performance test shall be repeated during conditions described under par. (b)2. No monthly performance tests are required.

(h) For each tread end cementing operation and each bead cementing operation that uses a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under sub. (3)(a)3. and 4.

1. Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under par. (d)1. to 4., or the mass of VOC used per bead cemented at the affected facility for the month (G_b) as specified under par. (e)1. to 4.

2. Calculate the total mass of VOC recovered from the affected facility for the month (M_r):

$M_r = L_r D_r$

3. Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month:

$$R = \frac{M_r}{M_o}$$

4. Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemented at the affected facility for the month (N_b):

$N = G(1-R)$

$N_b = G_b(1-R)$

(i) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that use a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the percent reduction requirement specified under sub. (3)(a)1.a., 2.a., 6.a., 7.c., 8.a., 9.a. and 10.a.

1. Determine the density and weight fraction VOC as specified under par. (c)1.

2. Calculate the total mass of VOC used at the affected facility for the month (M_o) as described under par. (c)2.

3. Calculate the total mass of VOC recovered from the affected facility for the month (M_r) as described under par. (h)2.

4. Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month as described under par. (h)3.

(j) Rather than seeking to demonstrate compliance with the provisions of sub. (3)(a)1.a., 2.a., 6.a., 7.c. or 9.a. using the performance test procedures described under pars. (g) and (i), an owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation that use a

VOC emission reduction system, may seek to demonstrate compliance by meeting the equipment design and performance specifications listed under par. (j)1., 2., and 4. to 6. or under par. (j)1. and 3. to 6. and by conducting a control device efficiency performance test to determine compliance as describe under par. (j)7. The owner or operator shall conduct this performance test of the control device efficiency no later than 180 days after initial startup of the affected facility, as specified under s. NR 440.08(1). Meeting the capture system design and performance specifications, in conjunction with operating a 95% efficient control device, is an acceptable means of demonstrating compliance with the standard. Therefore, the requirement for the initial performance test on the enclosure, as specified under s. NR 440.08(1), is waived. No monthly performance tests are required.

1. For each undertread cementing operation, each sidewall cementing operation, and each Michelin-B operation, the cement application and drying area shall be contained in an enclosure that meets the criteria specified under par. (j)2., 4. and 5. For each green tire spraying operation where organic solvent-based sprays are used, the spray application and drying area shall be contained in an enclosure that meets the criteria specified under par. (j)3., 4. and 5.

2. The drying area shall be enclosed between the application area and the water bath or to the extent necessary to contain all tire components for at least 30 seconds after cement application, whichever distance is less.

3. Sprayed green tires shall remain in the enclosure for a minimum of 30 seconds after spray application.

4. A minimum face velocity of 100 feet per minute shall be maintained continuously through each permanent opening into the enclosure when all temporary enclosure openings are closed. The cross-sectional area of each permanent opening shall be divided into at least 12 equal areas, and a velocity measurement shall be performed at the centroid of each equal area with an anemometer or similar velocity monitoring device; the face velocity of each permanent opening is the average value of the velocity measurements taken. The monitoring device shall be calibrated and operated according to the manufacturer's instructions. Temporary enclosure openings shall remain closed at all time except when worker access is necessary.

5. The total area of all permanent openings into the enclosure may not exceed the area that would be necessary to maintain the VOC concentration of the exhaust gas stream at 25% of the lower explosive limit (LEL) under the following

conditions:

a. The facility is operating at the maximum solvent use rate;

b. The face velocity through each permanent opening is 100 feet per minute; and

c. All temporary openings are closed.

6. All captured VOC are ducted to a VOC emission control device that is operated on a continuous basis and that achieves at least a 95% destruction or recovery efficiency.

7. The efficiency of the control device (E) for the initial performance test shall be determined by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device as described under par. (f) 2. b. The control device efficiency shall be redetermined during conditions specified under par. (b) 3.

(k) Each owner or operator of an affected facility who initially elected to be subject to the applicable percent emission reduction requirement specified under sub. (3)(a)1.a., 2.a., 6.a., 7.c., 8.a., 9.a. or 10.a. and who later seeks to comply with the applicable total (uncontrolled) monthly VOC use limit specified under sub. (3)(a)1.b., 2.b., 6.b., 7.d., 8.b., 9.b. or 10.b. shall demonstrate, using the procedures described under par. (c), that the total VOC use at the affected facility has not exceeded the applicable total (uncontrolled) monthly VOC use limit during each of the last 6 months of operation. The owner or operator shall be subject to the applicable percent emission reduction requirement until the conditions of this paragraph and sub. (7)(h) are satisfied.

(l) In determining compliance for each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation, the owner or operator shall include all the VOC used, recovered, or destroyed from cements and organic solvent-based green tire sprays including those cements or sprays used for tires other than those defined under sub. (2)(a).

(m) In determining compliance for each tread end cementing operation, each bead cementing operation, and each green tire spraying operation, the owner or operator shall include only those tires defined under sub. (2)(a) when determining T_o and B_o.

(5) MONITORING OF OPERATIONS. (a) Each owner or operator subject to the provisions of this section shall install, calibrate, maintain, and operate

according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the department.

1. Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder for the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of 1% of the temperature being measured in °C or ± 0.5 °C, whichever is greater.

2. Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder, for the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of 1% of the temperature being measured in °C or ± 0.5 °C, whichever is greater. For an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used or Michelin-B operation where a carbon adsorber is used to meet the performance requirements specified under sub. (4)(j)6., an organics monitoring device used to indicate the concentration level or organic compounds based on a detection principle such as infrared, photoionization, or thermal conductivity, equipped with a continuous recorder, for the outlet of the carbon bed.

(b) An owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation where a VOC recovery device other than a carbon adsorber is used to meet the performance requirement specified under sub. (4)(j)6. shall provide to the department information describing the operation of the control device and the process parameters which would indicate proper operation and maintenance of the device. The department may request further information and shall specify appropriate monitoring procedures or requirements.

(6) RECORDKEEPING REQUIREMENTS. (a) Each owner or operator of an affected facility that uses a thermal incinerator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation for which the average temperature of the gas stream in the combustion zone was more than 28°C (50°F) below the combustion zone temperature measured during the most recent determination of the destruction efficiency of the thermal incinerator that demonstrated that the

affected facility was in compliance.

(b) Each owner or operator of an affected facility that uses a catalytic incinerator shall maintain:

1. Continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator,

2. Records of all 3-hour periods of operation of which the average temperature measured before the catalyst bed is more than 28°C below the gas stream temperature measured before the catalyst bed during the most recent determination of destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance, and

3. Records of all 3-hour periods for which the average temperature difference across the catalyst bed is less than 80% of the temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance.

(c) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation that uses a carbon adsorber to meet the requirements specified under sub. (4)(j)6. shall maintain continuous records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases is more than 20% greater than the exhaust gas concentration level or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the affected facility was in compliance.

(d) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tires spraying operation where organic solvent-based sprays are used, Michelin-A operation, Michelin-B operation, or Michelin-C-automatic operation who seeks to comply with a specified kg/mo uncontrolled VOC use limit shall maintain records of monthly VOC use and the number of days in each compliance period.

(e) Each owner or operator that is required to conduct monthly performance tests, as specified under sub. (4)(b)1., shall maintain records of the results of all monthly tests.

(7) REPORTING REQUIREMENTS. (a) Each owner or operator subject to the provisions of this section, at the time of notification of the anticipated initial startup of an affected facility pursuant to s. NR 440.07(1)(b), shall

provide a written report to the department declaring for each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based spray are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation the emission limit the owner or operator intends to comply with and the compliance method, where sub. (4)(j) is applicable, to be employed.

(b) Each owner or operator subject to the provisions of this section, at the time of notification of the anticipated initial startup of an affected facility pursuant to s. NR 440.07(1)(b), shall specify the monthly schedule (each calendar month or a 4-4-5-week schedule) to be used in making compliance determinations.

(c) Each owner or operator subject to the provision of this section shall report the results of all initial performance tests, as required under s. NR 440.08(1), and the results of the performance test required under sub. (4)(b)2. and 3. The following data shall be included in the report for each of the performance tests:

1. For each affected facility for which the owner or operator seeks to comply with a kg/mo uncontrolled VOC use limit specified under sub. (3)(a): the monthly mass of VOC used (M_o) and the number days in the compliance period (T_d).

2. For each affected facility that seeks to comply with a g/tire or g/bead limit specified under sub. (3)(a) without the use of a VOC emission reduction system: the mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC emitted per tire cemented or sprayed (N), the number of beads cemented (B_o), and the mass of VOC emitted per bead cemented (N_b).

3. For each affected facility that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator) to comply with a g/tire or g/bead limit specified under sub. (3)(a): the mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC emitted per tire cemented or sprayed (N), the number of beads cemented (B_o), the mass of VOC emitted per bead cemented (N_b), the mass of VOC used per tire cemented or sprayed (G), the mass of VOC per bead cemented (G_b), the emission control device efficiency (E), the capture system efficiency (F_c), the face velocity through each permanent opening for the capture system with the temporary openings closed, and the overall system emission reduction (R).

4. For each affected facility that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator) to comply with a

percent emission reduction requirement specified under sub. (3)(a): the emission control device efficiency (E), the capture system efficiency (F_o), the face velocity through each permanent opening in the computer system with the temporary openings closed, and the overall system emission reduction (R).

5. For each affected facility that uses a carbon adsorber to comply with a g/tire or g/bead limit specified under sub. (3)(a): the mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC used per tire cemented or sprayed (G), the number of beads cemented (B_o), the mass of VOC used per bead (G_b), the mass of VOC recovered (M_r), the overall system emission reduction (R), the mass of VOC emitted per tire cemented or sprayed (N), and the mass of VOC emitted per bead cemented (N_b).

6. For each affected facility that uses a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber) to comply with a percent emission reduction requirement specified under sub. (3)(a): the mass of VOC used (M_o), the mass of VOC recovered (M_r), and the overall system emission reduction (R).

(d) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation who seeks to comply with the requirements described under sub. (4)(j) shall include in the initial compliance report a statement specifying, in detail, how each of the equipment design and performance specifications has been met. The initial compliance report also shall include the following data: the emission control device efficiency (E), the face velocity through each permanent enclosure opening with all temporary enclosure openings closed, the total area of all permanent enclosure openings, the total area of all temporary enclosure openings, the maximum solvent use rate (kg/hr), the types of VOC used, the lower explosive limit (LEL) for each VOC used, and the length of time each component is enclosed after application of cement or spray material.

(e) Each owner or operator of an affected facility shall include the following data measured by the required monitoring devices, as applicable, in the report for each performance test specified under par. (c):

1. The average combustion temperature measured at least every 15 minutes and averaged over the performance test period of incinerator destruction efficiency for each thermal incinerator.

2. The average temperature before and after the catalyst bed measured at least every 15 minutes and averaged over the performance test period of incinerator destruction efficiency for each catalytic incinerator.

3. The concentration level or reading indicated by the organics monitoring device at the outlet of the adsorber, measured at least every 15 minutes and averaged over the performance test period of carbon adsorber recovery efficiency while the vent stream is normally routed and constituted.

4. The appropriate data to be specified by the department where a VOC recovery device other than a carbon adsorber is used.

(f) Once every 6 months each owner or operator subject to the provisions of sub. (6) shall report, as applicable:

1. Each monthly average VOC emission rate that exceeds the g/tire or g/bead limit specified under sub. (3)(a), as applicable for the affected facility.

2. Each monthly average VOC use rate that exceeds the kg/mo VOC use limit specified under sub. (3)(a) as applicable for the affected facility.

3. Each monthly average VOC emission reduction efficiency for a VOC recovery device (e.g., carbon adsorber) less than the percent efficiency limit specified under sub. (3)(a) as applicable for the affected facility.

4. Each 3-hour period of operation for which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the combustion zone temperature measured during the most recent determination of the destruction efficiency of the thermal incinerator that demonstrated that the affected facility was in compliance.

5. Each 3-hour period of operation for which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the gas stream temperature measured before the catalyst bed during the most recent determination of the destruction efficiency of the catalyst incinerator that demonstrated that the affected facility was in compliance, and any 3-hour period of which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80% of the temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance.

6. Each 3-hour period of operation during which the average concentration level or reading of VOCs in the exhaust gases from a carbon adsorber is more than 20% greater than the exhaust gas concentration level or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the affected facility was in compliance.

(g) Each owner or operator of an affected facility who initially elected to be subject to the applicable percent emission reduction requirement specified under sub. (3)(a) and who later seeks to comply with the applicable total (uncontrolled) monthly VOC use limits specified under sub. (3)(a) and who has satisfied the provision specified under sub. (4)(k) shall furnish the department written notification no less than 30 days in advance of the date when the owner or operator intends to be subject to the applicable VOC use limit instead of the applicable percent emission reduction requirement.

(8) TEST METHODS AND PROCEDURES. (a) The test methods in Appendix A, of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, except as provided under s. NR 440.08(2), shall be used to determine compliance with sub. (3)(a) as follows:

1. Method 24 or formulation data for the determination of the VOC content of cements or green tire spray materials. In the event of dispute, Method 24 shall be the reference method. For Method 24, the cement or green tire spray sample shall be a 1-liter sample collected in a 1-liter container at a point where the sample will be representative of the material as applied in the affected facility.

2. Method 25 as the reference method for the determination of VOC concentrations in each stack, both entering and leaving an emission control device. The owner or operator shall notify the department 30 days in advance of any test by Method 25. For Method 25, the sampling time for each of 3 runs shall be at least one hour. Method 1 shall be used to select the sampling site, and the sampling point shall be the centroid of the duct or at a point no closer to the walls than one meter. The minimum sample volume shall be 0.003 dry standard cubic meter (dscm) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the department.

3. Method 2, 2A, 2C, or 2D, as appropriate, as the reference method for determination of the flow rate of the stack gas. The measurement site shall be

the same as the Method 25 sampling. A velocity traverse shall be made once per run within the hour that the Method 25 sample is taken.

4. Method 4 for determination of stack gas moisture.

SECTION 135. NR 440.65(2)(a)(intro.) and (b)(intro.) are amended to read:

NR 440.65(2)(a)(intro.) As used in this section ~~all,~~ terms not defined in this ~~subsection~~ paragraph have the ~~meaning designated~~ meanings given in s. NR 440.02.

(b) As used in this section ~~all,~~ symbols not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.03.

SECTION 136. NR 440.65(6)(d) is repealed.

SECTION 137. NR 440.66(1)(c), (2)(intro.), (3)(c) and (4)(b)2. and (d) are amended to read:

NR 440.66(1)(c) Addition or replacement of equipment (defined in sub. (2)) for the purpose of process improvement which is accomplished without a capital expenditure ~~shall~~ may not by itself be considered a modification under this section.

(2)(intro.) DEFINITIONS. As used in this section ~~all,~~ terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02 or 440.62.

(3)(c) An owner or operator may apply to the ~~department~~ administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this section under 40 C.F.R. s. 60.592(c), incorporated by reference in s. NR 440.17. In doing so the owner or operator shall comply with requirements of ~~s. NR 440.62(5)~~ 40 C.F.R. s. 60.484, incorporated by reference in s. NR 440.17, and provide notice to the department of any determination of equivalency approved by the administrator.

(4)(b)2. Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50% by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a

compressor procedures that conform to the general method described in ASTM ~~E-260, E-168~~ E260-73, E168-67, or ~~E-169~~ E169-63, incorporated by reference in s. NR 440.17, shall be used.

(d) An owner or operator may use the following provision in addition to s. NR 440.62(6)(e): Equipment is in light liquid service if the percent evaporated is greater than 10% at 150°C as determined by ASTM Method ~~D-86~~ D86-78 incorporated by reference in s. NR 440.17.

SECTION 138. NR 440.67(2)(a)(intro.) and 1. to 18. are renumbered (2)(intro.) and (a) to (r) and (2)(intro.), as renumbered, is amended to read:

NR 440.67(2) DEFINITIONS. As used in this section ~~all~~, terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02.

SECTION 139. NR 440.67(3)(a) is amended to read:

NR 440.67(3)(a) On and after the date on which the initial performance test required to be conducted by s. NR 440.08 is completed, no owner or operator subject to the provisions of this section ~~shall~~ may cause the discharge into the atmosphere from any affected facility that produces acrylic fibers VOC emissions that exceed 10 kilograms ~~(Kg)~~ (kg) VOC per megagram (Mg) solvent feed to the spinning solution preparation system or precipitation bath. VOC emissions from affected facilities that produce both acrylic and nonacrylic fiber types ~~shall~~ may not exceed 10 ~~Kg~~ kg VOC per Mg solvent feed. VOC emissions from affected facilities that produce only nonacrylic fiber types ~~shall~~ may not exceed 17 ~~Kg~~ kg VOC per Mg solvent feed. Compliance with the emission limitations is determined on a 6-month rolling average basis as described in sub. (4).

SECTION 140. NR 440.67(5)(c) is repealed.

SECTION 141. NR 440.68(2)(intro.) is amended to read:

NR 440.68(2)(intro.) DEFINITIONS. As used in this section ~~all~~, terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02.

SECTION 142. NR 440.68(3)(c) Note is created to read:

Note: The administrator may approve the use of equipment or procedures that have been demonstrated to be equivalent, in terms of reducing VOC emissions, to those prescribed for compliance in this section, under 40 C.F.R. s. 60.623.

SECTION 143. NR 440.68(4) is repealed:

SECTION 144. NR 440.682 is created to read:

NR 440.682 EQUIPMENT LEAKS OF VOC FROM ONSHORE NATURAL GAS PROCESSING PLANTS. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITY: (a)1. The provisions of this section apply to affected facilities in onshore natural gas processing plants.

2. A compressor in VOC service or in wet gas service is an affected facility.

3. The group of all equipment except compressors, as defined in sub. (2), within a process unit is an affected facility.

(b) Any affected facility under par. (a) that commences construction, reconstruction or modification after January 20, 1984 is subject to the requirements of this section.

(c) Addition or replacement of equipment, as defined in sub. (2), for the purpose of process improvement that is accomplished without a capital expenditure may not by itself be considered a modification under this section.

(d) Facilities covered by s. NR 440.62 or 440.66 are excluded from this section.

(e) A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquified natural gas unit is covered by this section if it is located at an onshore natural gas processing plant. If the unit is not located at the plant site, then it is exempt from the provisions of this section.

(2) DEFINITIONS. As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02 or 440.62.

(a) "Alaskan north slope" means the approximately 69,000 square-mile area extending from the Brooks Range to the Arctic Ocean.

(b) "Equipment" means each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service and any device or system required by this section.

(c) "Field gas" means feedstock gas entering the natural gas processing plant.

(d) "In light liquid service" means that the piece of equipment contains a liquid that meets the conditions specified in s. NR 440.62(6)(e) or sub.

(4)(h)2.

(e) "In wet gas service" means that a piece of equipment contains or contacts the field gas before the extraction step in the process.

(f) "Natural gas liquids" means the hydrocarbons, such as ethane, propane, butane and pentane, that are extracted from field gas.

(g) "Natural gas processing plant" or "gas plant" means any processing site engaged in the extraction of natural gas liquids from field gas fractionation of mixed natural gas liquids to natural gas products, or both.

(h) "Nonfractionating plant" means any gas plant that does not fractionate mixed natural gas liquids into natural gas products.

(i) "Onshore" means all facilities except those that are located in the territorial seas or on the outer continental shelf.

(j) "Process unit" means equipment assembled for the extraction of natural gas liquids from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.

(k) "Reciprocating compressor" means a piece of equipment that increases the pressure of a process gas by positive displacement employing linear movement of the driveshaft.

(3) STANDARDS. (a) Each owner or operator subject to the provisions of this section shall comply with the requirements of s. NR 440.62(3)(a)1., 2. and 4., and (b) to (j), except as provided in sub. (4), as soon as practicable, but no later than 180 days after initial startup.

(b) An owner or operator may elect to comply with the requirements of s. NR 440.62(4)(a) and (b).

(c) An owner or operator may apply to the department for permission to use an alternative means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to that achieved by the controls required in this section. In doing so, the owner or operator shall comply with requirements of sub. (5).

(d) Each owner or operator subject to the provisions of this section shall comply with the provisions of s. NR 440.62(6) except as provided in sub. (4)(f).

(e) Each owner or operator subject to the provisions of this section shall comply with the provisions of s. NR 440.62(7) and (8) except as provided in subs. (4), (6) and (7).

(f) An owner or operator shall use the following provisions instead of s. NR 440.62(6)(d)1. Each piece of equipment is presumed to be in VOC service or in wet gas service unless an owner or operator demonstrates that the piece of equipment is not in VOC service or in wet gas service. For a piece of equipment to be considered not in VOC service, it shall be determined that the percent VOC content can be reasonably expected never to exceed 10.0% by weight. For a piece of equipment to be considered in wet gas service, it shall be determined that it contains or contacts the field gas before the extraction step in the process. For purposes of determining the percent VOC content of the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the methods described in ASTM Methods E169-63, E168-67, or E260-73, incorporated by reference in s. NR 440.17, shall be used.

(4) EXCEPTIONS. (a) Each owner or operator subject to the provisions of this section may comply with the exceptions to the provisions of s. NR 440.62.

(b)1. Each pressure relief device in gas/vapor service may be monitored quarterly and within 5 days after each pressure release to detect leaks by the methods specified in s. NR 440.62(6)(b) except as provided in sub. (3)(c), subd. 4., and s. NR 440.62(3)(d)1.c.

2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

3.a. When a leak is detected, it shall be repaired as soon as practical, but no later than 15 calendar days after it is detected except as provided in s. NR 440.62(3)(i).

b. A first attempt at repair shall be made no later then 5 calendar days after each leak is detected.

4.a. Any pressure relief device that is located in a nonfractionating plant that is monitored only by nonplant personnel may be monitored after a pressure release the next time the monitoring personnel are on site, instead of within 5 days as specified in subd. 1. and s. NR 440.62(3)(d)2.a.

b. No pressure relief device described in subpar. a. may be allowed to operate for more than 30 days after a pressure release without monitoring.

(c) Sampling connection systems are exempt from the requirements of s. NR 440.62(3)(e).

(d) Pumps in light liquid service, valves in gas/vapor and light liquid service and pressure relief devices in gas vapor service that are located at a nonfractionating plant that does not have the design capacity to process 283,000

standard cubic meters per day (scmd) (10 million scf/day) or more of field gas are exempt from the routine monitoring requirements of s. NR 440.62(3)(b)1.a. and (5)(g)1. and par. (b)1.

(e) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service within a process unit that is located in the Alaskan North Slope are exempt from the routine monitoring requirements of ss. NR 440.62(3)(b)1.a., and (3)(g)1. and par. (b)1.

(f) Reciprocating compressors in wet gas service are exempt from the compressor control requirements of s. NR 440.62(3)(c).

(g) Flares used to comply with this section shall comply with requirements of s. NR 440.18.

(h) An owner or operator may use the following provisions instead of s. NR 440.62(6)(e).

1. Equipment is in heavy liquid service if the weight percent evaporated is 10% or less at 150°C as determined by ASTM Method D86-78, incorporated by reference in s. NR 440.17.

2. Equipment is in light liquid service if the weight percent evaporated is greater than 10% at 150°C as determined by ASTM Method D86-78, incorporated by reference in s. NR 440.17.

(5) ALTERNATIVE MEANS OF EMISSION LIMITATION. (a) If, in the administrator's judgement, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under any design, equipment, work practice or operational standard, the administrator will publish, in the federal register, a notice permitting the use of that alternative means for the purpose of compliance with that standard. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under par. (a) shall be published only after notice and an opportunity for a public hearing.

(c) The administrator will consider applications under this subsection from either owners or operators of affected facilities, or manufacturers of control equipment.

(d) The administrator will treat applications under this subsection according to the following criteria, except in cases where he or she concludes that other criteria are appropriate:

1. The applicant shall collect, verify and submit test data, covering a period of at least 12 months, necessary to support the finding in par. (a).

2. If the applicant is an owner or operator of an affected facility, he or she shall commit in writing to operate and maintain the alternative means so as to achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under the design, equipment, work practice or operational standard.

(6) RECORDKEEPING REQUIREMENTS. (a) Each owner or operator subject to the provisions of this section shall comply with the requirements of pars. (b) and (c) in addition to the requirements of s. NR 440.62(7).

(b) The following recordkeeping requirements shall apply to pressure relief devices subject to the requirements of sub. (4)(b)1.:

1. When each leak is detected as specified in sub. (4)(b)2., a weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.

2. When each leak is detected as specified in sub. (4)(b)2., the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

a. The instrument and operator identification numbers and the equipment identification number.

b. The date the leak was detected and the dates of each attempt to repair the leak.

c. Repair methods applied in each attempt to repair the leak.

d. "Above 10,000 ppm" if the maximum instrument reading measured by the methods specified in after each repair attempt is 10,000 ppm or greater.

e. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

f. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

g. The expected date of successful repair of the leak if a leak is not repaired within 15 days.

h. Dates of process unit shutdowns that occur while the equipment is unrepaired.

i. The date of successful repair of the leak.

j. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of s. NR 440.62(3)(d)1. The designation of equipment subject to the provisions of s. NR 440.62(3)(d)1. signed by the owner or operator.

(c) An owner or operator shall comply with the following requirement in addition to the requirement of s. NR 440.62(10): Information and data used to demonstrate that a reciprocating compressor is in wet gas service to apply for the exemption in sub. (4)(f) shall be recorded in a log that is kept in a readily accessible location.

(7) REPORTING REQUIREMENTS. (a) Each owner or operator subject to the provisions of this section shall comply with the requirements of pars. (b) and (c) in addition to the requirements of s. NR 440.62(8).

(b) An owner or operator shall include the following information in the initial semiannual report in addition to the information required in s. NR 440.62(8)(b)1. to 4: number of pressure relief devices subject to the requirements of sub. (4)(b) except for those pressure relief devices designated for no detectable emission under the provision of s. NR 440.62(3)(d)1. and those pressure relief devices complying with s. NR 440.62(3)(d)3.

(c) An owner or operator shall include the following information in all semiannual reports in addition to the information required in s. NR 440.62(8)(c)2.a. to f.:

1. Number of pressure relief devices for which leaks were detected as required in sub. (4)(b)2. and

2. Number of pressure relief devices for which leaks were not repaired as required in sub. (4)(b)3.

SECTION 145. NR 440.684 is created to read:

NR 440.684 ONSHORE NATURAL GAS PROCESSING: SO_2 EMISSIONS. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITIES. (a) The provisions of this section are applicable to the following affected facilities that process natural gas: each sweetening unit, and each sweetening unit followed by a sulfur recovery unit.

(b) Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur) are required to comply with sub. (8)(c) but are not required to comply with subs. (3) to (7).

(c) The provisions of this section are applicable to facilities located on land and include facilities located onshore which process natural gas produced from either onshore or offshore wells.

(d) The provisions of this section apply to each affected facility identified in par. (a) which commences construction or modification after January 20, 1984.

(e) The provisions of this section do not apply to sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere.

(2) DEFINITIONS AND SYMBOLS. (a) As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02.

1. "Acid gas" means a gas stream of hydrogen sulfide (H_2S) and carbon dioxide (CO_2) that has been separated from sour natural gas by a sweetening unit.

2. "Natural gas" means a naturally occurring mixture of a hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface. The principal hydrocarbon constituent is methane.

3. "Onshore" means all facilities except those that are located in the territorial seas or on the outercontinental shelf.

4. "Reduced sulfur compounds" means H_2S, carbonyl sulfide (COS), and carbon disulfide (CS_2).

5. "Sulfur production rate" means the rate of liquid sulfur accumulation from the sulfur recovery unit.

6. "Sulfur recovery unit" means a process device that recovers element sulfur from acid gas.

7. "Sweetening unit" means a process device that separates the H_2S and CO_2 contents from the sour natural gas stream.

8. "Total SO_2 equivalents" means the sum of volumetric or mass concentrations of the sulfur compounds obtained by adding the quantity existing as SO_2 to the quantity of SO_2 that would be obtained if all reduced sulfur compounds were converted to SO_2 (ppmv or kg/DSCM).

(b) As used in this section, all symbols not defined in this subsection have the meanings given them in s. NR 440.03.

1. "E" = the sulfur emission rate expressed as elemental sulfur, kilograms per hour (kg/hr) rounded to one decimal place.

2. "P" = the sulfur emission reduction efficiency achieved in percent carried to one decimal place.

3. "S" = the sulfur production rate in kilograms per hour (kg/hr) rounded to one decimal place.

4. "X" = the sulfur feed rate, i.e., the H_2S in the acid gas (expressed as sulfur) from the sweetening unit, expressed in long tons per day (LT/D) of sulfur rounded to one decimal place.

5. "Y" = the sulfur content of the acid gas from the sweetening unit, expressed as mole percent H_2S (dry basis) rounded to one decimal place.

6. "Z" = the minimum required sulfur dioxide (SO_2) emission reduction efficiency, expressed as percent carried to one decimal place. Z_i refers to the reduction efficiency required at the initial performance test. Z_c refers to the reduction efficiency required on a continual basis after compliance with Z_i has been demonstrated.

(3) STANDARDS FOR SULFUR DIOXIDE. (a) During the initial performance test required by s. NR 440.08(2), each owner or operator shall achieve, at a minimum, an SO_2 emission reduction efficiency (Z_i) to be determined from Table 1 based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

(b) After demonstrating compliance with the provisions of par. (a), the owner or operator shall achieve, at a minimum, an SO_2 emission reduction efficiency (Z_c) to be determined from Table 2 based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

(4) COMPLIANCE PROVISIONS. (a) 1. To determine compliance with the standards for sulfur dioxide specified in sub. (3)(a), during the initial performance test as required by s. NR 440.08, the minimum required sulfur dioxide emissions reduction efficiency (Z) is compared to the emission reduction efficiency (R) achieved by the sulfur recovery technology.

a. If R is greater than or equal to Z_i, the affected facility is in compliance.

b. If R is less than Z_i, the affected facility is not in compliance.

2. Following the initial determination of compliance as required by s. NR 440.08, any subsequent compliance determinations that may be required by the department shall compare R to Z_c.

(b) The emission reduction efficiency (R) achieved by the sulfur recovery technology is calculated by using the equation:

$$R = \frac{S}{S+E} \times 100$$

"S" and "E" are determined using the procedures and test methods specified in subs. (5) and (6).

Table 1. REQUIRED MINIMUM INITIAL SO_2 EMISSION REDUCTION EFFICIENCY (Z_i)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \leq X \leq 5.0$	$5.0 < X \leq 15.0$	$15.0 < X \leq 300.0$	$X > 300.0$
$Y \geq 50$	79.0	. . . $88.51\ X^{0.0101}\ Y^{0.0125}$ or 99.8, whichever is smaller		. . .
$20 \leq Y < 50$	79.0	. . . . $88.51\ X^{0.0101}\ Y^{0.0125}$ or 97.9, whichever is smaller	. . . .	97.9
$10 \leq Y < 20$	79.0	$88.51\ X^{0.0101}\ Y^{0.0125}$ or 93.5, whichever is smaller	93.5	93.5
$Y < 10$	79.0	79.0	79.0	79.0

Table 2. REQUIRED MINIMUM SO_2 EMISSION REDUCTION EFFICIENCY (Z_c)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \leq X \leq 5.0$	$5.0 < X \leq 15.0$	$15.0 < X \leq 300.0$	$X > 300.0$
$Y \geq 50$	74.0	. . . $85.35\ X^{0.0144}\ Y^{0.0128}$ or 99.8, whichever is smaller		. . .
$20 \leq Y < 50$	74.0	. . . . $85.35\ X^{0.0144}\ Y^{0.0128}$ or 97.5, whichever is smaller	. . . .	97.5
$10 \leq Y < 20$	74.0	$85.35\ X^{0.0144}\ Y^{0.0128}$ or 90.8, whichever is smaller	90.8	90.8
$Y < 10$	74.0	74.0	74.0	74.0

(5) PERFORMANCE TEST PROCEDURES. (a) During a performance test required by s. NR 440.08, the minimum required sulfur dioxide emission reduction efficiency (Z_i) required by sub. (3)(a) and the minimum required SO_2 emission reduction efficiency (Z_c) required by sub. (3)(b) shall be determined as follows:

1. Collect and analyze at least one sample per hour (at equally spaced intervals during the performance test) of the acid gas from the sweetening unit

using the method specified in sub. (6)(a)8. The units of the result from the Tutwiler procedure can be converted to volume percent using the following equation:

$$Y = (1.62 \quad 10^{-3}) \quad (\text{grains/100 scf})$$

where:

Y = H_2S concentration, volume percent

1.62 10^{-3} = volume percent per grains/100 scf

grains/100 scf = Tutwiler result basis

2. Calculate the arithmetic mean of all samples to determine the average H_2S concentration (Y) in mole percent (dry basis) in the acid gas.

3. Determine the average volumetric flow rate of the acid gas from the sweetening unit by continuous measurements made with the process flow meter. Express the results as dry standard cubic feet per day (dscf/day).

4. Calculate the average sulfur feed rate (X) in long tons per day of elemental sulfur from the average volumetric flow rate and the average H_2S content, from sub. (5)(a), by the equation:

$$X = \frac{(\text{average volumetric acid gas flow, dscf/day})\ (Y/100)\ (32\ \text{lb/lb mole})}{(385.36\ \text{standard cubic feet/lb mole})\ (2{,}240\ \text{lb/long ton})}$$

5. Determine the minimum required SO_2 removal efficiency (Z_i or Z_c) in accordance with the provisions of the standards in sub. (3)(a) or (b) as appropriate.

(b) The actual sulfur emission reduction efficiency (R) achieved by the control technology during the performance test shall be determined as follows:

1. Measure the liquid sulfur accumulation rate in the product storage tanks using level indicators or manual soundings. Record the level reading at the beginning and end of each test run. Convert the level readings to mass (kilograms) of sulfur in the storage tanks using the tank geometry and the sulfur density at the temperature of storage. Divide the change in mass by the test duration (hours and fractions of hours) to determine the sulfur production rate in kilograms per hour for each run.

2. Calculate the arithmetic means of the rate for each run to determine the average sulfur production rate (S) to use in sub. (4)(b).

3. Measure the concentrations of sulfur dioxide and total reduced sulfur compounds in the incinerator (or other final processing unit) exhaust gas using the methods specified in sub. (6)(a)5. to 7. The minimum sampling time for each run shall be 4 hours. For each run the SO_2 and TRS concentrations shall be combined to calculate the total SO_2 equivalent concentration as follows:

Total SO_2 equivalent, (kg/dscm)
= 0.001 (SO_2 concentration mg/dscm from Method 6)
− 2.704 10^{-6} (SO_2 equivalents in ppmv, dry, from Method 15 or from Method 16A)

(Methods 6, 15 and 16A of 40 C.F.R. pt. 60, Appendix A, are incorporated by reference in s. NR 440.17)

4. Measure the incinerator (or other final processing unit) exhaust gas velocity, molecular weight, and moisture content using the methods specified in sub. (6)(a)1. to 4. Calculate the volumetric flow rate of the exhaust gas at dry standard conditions using equation 2-10 in Method 2, 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17.

5. Calculate the equivalent sulfur emission rate as elemental sulfur for each run as follows:

Sulfur emission rate
= (total SO_2 equivalent kg/dscm) gas flow rate, dscm/hr) (0.50)

Calculate the arithmetic mean of the sulfur emission rate for each run to determine the average sulfur emission rate (E) to use in sub. (4)(b).

(6) PERFORMANCE TEST METHODS. (a) For the purpose of determining compliance with sub. (3)(a) or (b), the following reference methods, contained in 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, shall be used:

1. Method 1 for velocity traverse points selection.

2. Method 2 for determination of stack gas velocity and calculation of the volumetric flow rate.

3. Method 3 for determination of stack gas molecular weight.

4. Method 4 for determination of the stack gas moisture content.

5. Method 6 for determination of SO_2 concentration.

6. Method 15 for determination of the TRS concentration from reduction-type devices or where the oxygen content of the stack gas is less than 1.0% by

volume.

7. Method 16A for determination of the TRS concentration from oxidation-type devices or where the oxygen content of the stack gas is greater than 1.0% by volume.

8. The Tutwiler procedure in sub. (9) or a chromatograph procedure following ASTM E260-73, which is incorporated by reference in s. NR 440.17, for determination of the H_2S concentration in the acid gas feed from the sweetening unit.

(b) The sampling location for Methods 3, 4, 6, 15, and 16A shall be the same as that used for velocity measurement by Method 2. The sampling point in the duct shall be at the centroid of the cross-section if the area is less than 5 m^2 (54 ft^2) or at a point no closer to the walls than 1 m (30 inches) if the cross-sectional area is 5 m^2 or more and the centroid is more than one meter from the wall. For Methods 3, 4, 6, and 16A, the sample shall be extracted at a rate proportional to the gas velocity at the sampling point. For Method 15, the minimum sampling rate shall be 3 liters/minute (0.1 ft^3/minute) to insure minimum residence time in the sample line.

(c) For Methods 6 and 16A, the minimum sampling time for each run shall be 4 hours. Either one sample or a number of separate samples may be collected for each run so long as the total sample time is 4 hours. Where more than one sample is collected per run, the average result for the run is calculated by:

$$C_s = \sum_{i=1}^{n} (C_{si}) \frac{t_{si}}{T}$$

where:

C_s = time-weighted average SO_2 or TRS concentration for the run, (mg/dscm or ppmv, dry)

n = number of samples collected during the run

C_{si} = SO_2 or TRS concentration for sample i, (mg/dscm or ppmv, dry)

t_{si} = sampling time for sample i (minutes)

T = total sampling time for all samples in the run (minutes)

(d) For Method 15, each run shall consist of 16 samples taken over a minimum of 4 hours. The equivalent SO_2 concentration for each run shall be

calculated as the arithmetic average of the SO_2 equivalent concentration for each sample.

(e) For Method 2, a velocity traverse shall be conducted at the beginning and end of each run. The arithmetic average of the 2 measurements shall be used to calculate the volumetric flow rate for each run.

(f) For Method 3, a single sample may be integrated over the 4-hour run interval and analysis, or grab samples at 1-hour intervals may be calculated, analyzed, and averaged to determine the stack gas composition.

(g) For Method 4, each run shall consist of 2 samples, one collected at the beginning of the 4-hour test period, and one near the end of the period. For each sample the minimum sample volume shall be 0.1 dscm (0.35 dscf) and the minimum sample time shall be 10 minutes.

(7) MONITORING OF EMISSIONS AND OPERATIONS. (a) The owner or operator subject to the provisions of sub. (3)(a) or (b) shall install, calibrate, maintain and operate monitoring devices or perform measurements to determine the following operations information on a daily basis:

1. The accumulation of sulfur product over each 24-hour period: The monitoring method may incorporate the use of an instrument to measure and record the liquid sulfur production rate, or may be a procedure for measuring and recording the sulfur liquid levels in the storage tanks with a level indicator or by manual soundings with subsequent calculation of the sulfur production rate based on the tank geometry, stored sulfur density, and elapsed time between readings. The method shall be designed to be accurate with $\pm$ 2% of the 24-hour sulfur accumulation.

2. The H_2S concentration in the acid gas from the sweetening unit for each 24-hour period: At least one sample per 24-hour period shall be collected and analyzed using the method specified in sub. (6)(a)8. The department may require the owner or operator to demonstrate that the H_2S concentration obtained from one or more samples over a 24-hour period is within $\pm$ 20% of the average of 12 samples collected at equally spaced intervals during the 24-hour period. In instances where the H_2S concentration of a single sample is not within $\pm$ 20% of the average of the 12 equally spaced samples, the department may require a more frequent sampling schedule.

3. The average acid gas flow rate from the sweetening unit: The owner or operator shall install and operate a monitoring device to continuously measure the flow rate of acid gas. The monitoring device reading shall be recorded at

least once per hour during each 24-hour period. The average acid gas flow rate shall be computed from the individual readings.

4. The sulfur feed rate (X): For each 24-hour period, X shall be computed using the equation in sub. (5)(a)4.

5. The required sulfur dioxide emission reduction efficiency for the 24-hour period. The sulfur feed rate and the H_2S concentration in the acid gas for the 24-hour period as applicable, shall be used to determine the required efficiency in accordance with the provisions of sub. (3)(b).

(b) Where compliance is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate monitoring devices and continuous emission monitors as follows:

1. A continuous monitoring system to measure the total sulfur emission rate (E) of SO_2 in the gases discharged to the atmosphere. The SO_2 emission rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr). The span of this monitoring system shall be set so that the equivalent emission limit of sub. (3)(b) will be between 30% and 70% of the measurement range of the instrument system.

2. Except as provided in subd. 3.: A monitoring device to measure the temperature of the gas leaving the combustion zone of the incinerator, if compliance with sub. (3)(a) is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device. The monitoring device shall be certified by the manufacturer to be accurate to within $\pm$ 1% of the temperature being measured. When performance tests are conducted under the provision of s. NR 440.08 to demonstrate compliance with the standards under sub. (3), the temperature of the gas leaving the incinerator combustion zone shall be determined using the monitoring device. If the volumetric ratio of sulfur dioxide to sulfur dioxide plus total reduced sulfur (expressed as SO_2) in the gas leaving the incinerator is $\geq$ 0.98, then temperature monitoring may be used to demonstrate that sulfur dioxide emission monitoring is sufficient to determine total sulfur emissions. At all times during the operation of the facility, the owner or operator shall maintain the average temperature of the gas leaving the combustion zone of the incinerator at or above the appropriate level determined during the most recent performance test to ensure the sulfur compound oxidation criteria are met. Operation at lower average temperatures may be considered by the department to

be unacceptable operation and maintenance of the affected facility. The owner or operator may request that the minimum incinerator temperature be reestablished by conducting new performance tests under s. NR 440.08.

3. Upon promulgation of a performance specification of continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants, the owner or operator may, as an alternative to subd. 2., install, calibrate, maintain, and operate a continuous emission monitoring system for total reduced sulfur compounds as required in par. (d) in addition to a sulfur dioxide emission monitoring system. The sum of the equivalent sulfur mass emission rates from the 2 monitoring systems shall be used to compute the total sulfur emission rate (E).

(c) Where compliance is achieved through the use of a reduction control system not followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system to measure the emission rate of reduced sulfur compounds as SO_2 equivalent in the gases discharged to the atmosphere. The SO_2 equivalent compound emission rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr). The span of this monitoring system shall be set so that the equivalent emission limit of sub. (3)(b) will be between 30 and 70% of the measurement range of the system. This requirement becomes effective upon promulgation of a performance specification for continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants.

(d) For those sources required to comply with pars. (b) and (c), the average sulfur emission reduction efficiency achieved (R) shall be calculated for each 24-hour clock interval. The 24-hour interval may begin and end at any selected clock time but shall be consistent. The 24-hour average reduction efficiency (R) shall be computed based on the 24-hour average sulfur production rate (S) and sulfur emission rate (E) using the equation in sub. (4)(b).

1. Data obtained from the sulfur production rate monitoring device specified in par. (a) shall be used to determine S.

2. Data obtained from the sulfur emission rate monitoring systems specified in par. (b) or (c) shall be used to calculate a 24-hour average for the sulfur emission rate (E). The monitoring system shall provide at least one data point in each successive 15-minute interval. At least 2 data points shall be used to calculate each 1-hour average. A minimum of 18 1-hour averages shall be used to compute each 24-hour average.

(e) In lieu of complying with par. (b) or (c), those sources with a design capacity of less than 150 LT/D of H_2S expressed as sulfur may calculate the sulfur emission reduction efficiency achieved for each 24-hour period by:

$$R = \frac{0.0236\ S}{X}\ (100\ \%)$$

where:

R = the sulfur dioxide removal efficiency achieved during the 24-hour period, percent

S = the sulfur production rate during the 24-hour period, kg/hr

X = the sulfur feed rate in the acid gas LT/D

0.0236 = conversion factor, LT/D per kg/hr

(f) The monitoring devices required in sub. (7)(b)1., (b)3., and (c) shall be calibrated at least annually according to the manufacturer's specifications as required by s. NR 440.13(2).

(g) The continuous emission monitoring systems required in sub. (7)(b)1., (b)3., and (c) shall be subject to the emission monitoring requirements of s. NR 440.13. For conducting the continuous emission monitoring system performance evaluation required by s. NR 440.13(3), Performance Specification 2 of 40 C.F.R. pt. 60, Appendix B, incorporated by reference in s. NR 440.17, shall apply, and Method 6 of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, shall be used for systems required by par. (b).

(8) RECORDKEEPING AND REPORTING REQUIREMENTS. (a) Records of the calculations and measurements required in subs. (3)(a) and (b) and (7)(a) to (g) shall be retained for at least 2 years following the date of the measurements by owners and operators subject to this section. This requirement is included under s. NR 440.07(4).

(b) Each owner or operator shall submit a written report of excess emissions to the department semiannually. For the purpose of these reports, excess emissions are defined as:

1. Any 24-hour period (at consistent intervals) during which the average sulfur emission reduction efficiency (R) is less than the minimum required efficiency (Z).

2. For any affected facility electing to comply with the provisions of sub. (7)(b)2., any 24-hour period during which the average temperature of the gases

leaving the combustion zone of an incinerator is less than the appropriate operating temperatures determined during the most recent performance test in accordance with the provisions of sub. (7)(b)2. Each 24-hour period shall consist of at least 96 temperature measurements equally spaced over the 24 hours.

(c) To certify that a facility is exempt from the control requirements of these standards, each owner or operator of a facility with a design capacity less than 2 LT/D of H_2S in the acid gas (expressed as sulfur) shall keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 LT/D of H_2S expressed as sulfur.

(d) Each owner or operator who elects to comply with sub. (7)(e) shall keep, for the life of the facility, a record demonstrating that the facility's design capacity is less than 150 LT/D of H_2S expressed as sulfur.

(9) OPTIONAL PROCEDURE FOR MEASURING HYDROGEN SULFIDE IN ACID GAS-TUTWILER PROCEDURE. (a) General. The Tutwiler procedure may be used to measure hydrogen sulfide in acid gas in accordance with the Gas Engineer's Handbook, first edition, second printing, Fuel Gas Engineering Practices, page 6/25, incorporated by reference in s. NR 440.17. When an instantaneous sample is desired and H_2S concentration is 10 grains per 1000 cubic foot or more, a 100 ml Tutwiler burette is used. For concentrations less than 10 grains, a 500 ml Tutwiler burette and more dilute solutions are used. In principle this method consists of titrating hydrogen sulfide in a gas sample directly with a standard solution of iodine.

(b) Apparatus. (See Figure 1.) A 100 or 500 ml capacity Tutwiler burette with 2-way glass stopcock at the bottom and 3-way stopcock at the top is connected either with inlet tubulature or a glass-stoppered cylinder, 10 ml capacity, graduated in 0.1 ml subdivisions, with rubber tubing connecting the burette with a leveling bottle.

(c) Reagents. 1. Iodine stock solution, 0.1N. Weigh out 12.7 g of iodine and 20 to 25 g cp potassium iodide for each liter of solution. Dissolve the KI in as little water as necessary and then dissolve the iodine in the concentrated KI solution, make up to proper volume, and store in a glass-stoppered brown glass bottle.

2. Standard iodine solution, 1 ml = 0.001771 g I. Transfer 33.7 ml of the 0.1N stock solution into a 250 ml volumetric flask, add water to the mark and mix well. Then, for a 100 ml sample of gas, 1 ml of standard iodine solution is

equivalent to 100 grains of H_2S per cubic foot of gas.

3. Starch solution. Rub into a thin paste about one teaspoonful of wheat starch with a little water, pour it into about a pint of boiling water and stir. After it has cooled, decant off the clear solution. Make fresh solution every few days.

(d) Procedure. Fill the leveling bulb with starch solution. Raise (L), open cock (G), open (F) to (A), and close (F) when the solution starts to run out of the gas inlet. Close (G). Purge the gas sampling line and connect it with (A). Lower (L) and open (F) and (G). When the liquid level is several ml past the 100 ml mark, close (G) and (F), and disconnect the sampling tube. Open (G) and bring the starch solution to the 100 ml mark by raising (L), then close (G). Open (F) momentarily, to bring the gas in the burette to atmospheric pressure, and close (F). Open (G) and bring the liquid level down to the 10 ml mark by lowering (L). Close (G), clamp the rubber tubing near (E) and disconnect it from the burette. Rinse the graduated cylinder with a standard iodine solution (0.00171 g I per ml), fill the cylinder and record the reading. Introduce successive small amounts of iodine thru (F), shaking well after each addition, and continue until a faint permanent blue color is obtained. Record the reading, subtract it from the previous reading and call the difference D.

(e) Reagent test. With every fresh stock of starch solution, perform a blank test as follows: introduce fresh starch solution into the burette up to the 100 ml mark. Close (F) and (G). Lower (L) and open (G). When the liquid level reaches the 10 ml mark, close (G). With air in the burette titrate as during a test and up to the same end point. Call the ml of iodine used C. Then,

$$\text{Grains } H_2S \text{ per 100 cubic foot of gas} = 100\ (D-C)$$

(f) Sensitivity enhancement. Greater sensitivity can be attained if a 500 ml capacity Tutwiler burette is used with a more dilute (0.001N) iodine solution. Concentrations less than 1.0 grains per 100 cubic foot can be determined in this way. Usually the starch-iodine end point is much less distinct and a blank determination of end point, with H_2S-free gas or air, is required.

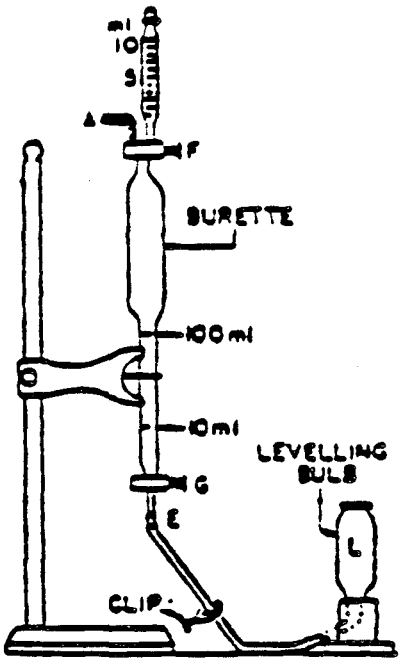

Figure 1. Tutwiler burette (lettered items mentioned in text).

SECTION 146. NR 440.688 is created to read:

NR 440.688 NONMETALLIC MINERAL PROCESSING PLANTS. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITY. (a) Except as provided in pars. (b) to (d), the provisions of this section are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants; each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station.

(b) An affected facility that is subject to the provisions of s. NR 440.22 or 440.25 or that follows in the plant process any facility subject to the provisions of s. NR 440.22 or 440.25 is not subject to the provisions of this section.

(c) Facilities at the following plants are not subject to the provision of this section.

1. Fixed sand and gravel plants and crushed stone plants with capacities, as defined in sub. (2), of 23 megagrams per hour (25 tons per hour) or less;

2. Portable sand and gravel plants and crushed stone plants with capacities, as defined in sub. (2), of 136 megagrams per hour (150 tons per hour) or less; and

3. Common clay plants and pumice plants with capacities, as defined in sub. (2), of 9 megagrams per hour (10 tons per hour) or less.

(d)1. When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in sub. (2) having the same function as the existing facility, the new facility is exempt from the provisions of subs. (3), (5) and (6) except as provided for in par. (d) 3.

2. An owner or operator seeking to comply with this paragraph shall comply with the reporting requirements of sub. (7)(a) and (b).

3. An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in subd. 1. and shall comply with the provisions of subs. (3), (5) and (6).

(e) An affected facility under par. (a) that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this section.

(2) DEFINITIONS. As used in this section, terms not defined in this subsection have the meanings given in s. NR 440.02.

(a) "Bagging operation" means the mechanical process by which bags are filled with nonmetallic minerals.

(b) "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.

(c) "Bucket elevator" means a conveying device of nonmetallic minerals 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.

(d) "Building" means any frame structure with a roof.

(e) "Capacity" means the cumulative rated capacity of all initial crushers that are part of the plant.

(f) "Capture system" means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more process operations to a control device.

(g) "Control device" means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more process operations at a nonmetallic mineral processing plant.

(h) "Conveying system" means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

(i) "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.

(j) "Enclosed truck or railcar loading station" means that portion of a nonmetallic mineral processing plant were nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

(k) "Fixed plant" means any nonmetallic mineral processing plant at which the processing equipment specified in sub. (1)(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

(l) "Fugitive emission" means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

(m) "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.

(n) "Initial crusher" means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

(o) "Nonmetallic mineral" means any of the following minerals or any mixture of which the majority is any of the following minerals:

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

2. Sand and gravel.

3. Clay including kaolin, fireclay, bentonite, Fuller's earth, Ball clay, and common clay.

4. Rock salt.

5. Gypsum.

6. Sodium compounds, including sodium carbonate, sodium chloride, and sodium sulfate.

7. Pumice.

8. Gilsonite.

9. Talc and pyrophyllite.

10. Boron, including borax, kernite, and colemanite.

11. Barite.

12. Fluorospar.

13. Feldspar.

14. Diatomite.

15. Perlite.

16. Vermiculite.

17. Mica.

18. Kyanite, including andalusite, sillimanite, topaz, and dumortierite.

(p) "Nonmetallic mineral processing plant" means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in sub. (1)(b) and (c).

(q) "Portable plant" means any nonmetallic mineral processing 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 must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

(r) "Production line" means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

(s) "Screening operation" means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

(t) "Size" means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

(u) "Stack emissions" means the particulate matter that is released to the atmosphere from a capture system.

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

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

(x) "Truck dumping" means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: trucks, front end loaders, skip hoists, and railcars.

(y) "Vent" means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

(3) STANDARD FOR PARTICULATE MATTER. (a) On and after the date on which the performance test required to be conducted by s. NR 440.08 is completed, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:

1. Contain particulate matter in excess of 0.05 g/dscm, or

2. Exhibit greater than 7% opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber shall comply with the reporting provisions of sub. (7)(c) to (e).

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator subject to the provisions of this section may cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10% opacity except as provided in pars. (c) to (e).

(c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator may cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15% opacity.

(d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

(e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building then each enclosed affected facility shall comply with the following emission limits:

1. No owner or operator may cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions except emissions from a vent as defined in sub. (2).

2. No owner or operator may cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions which exceed the stack emissions limits in par. (a).

(4) RECONSTRUCTION. (a) The cost of replacement of ore-contact surfaces on processing equipment may not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital cost that would be required to construct a comparable new facility" under s. NR 440.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.

(b) Under s. NR 440.15, the "fixed capital cost of the new components" includes the fixed capital cost of all depreciable components (except components specified in par. (a)) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

(5) MONITORING OF OPERATIONS. The owner or operator of any affected facility subject to the provisions of this section which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

(a) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device shall be certified by the manufacturer to be accurate within $\pm$ 250 pascals $\pm$ 1 inch water gauge pressure and shall be calibrated on an annual basis in accordance with manufacturer's instructions.

(b) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device shall be certified by the manufacturer to be accurate within $\pm$ 5% of design scrubbing liquid flow rate and

shall be calibrated on an annual basis in accordance with manufacturer's instructions.

(6) TEST METHODS AND PROCEDURES. (a) Reference methods in 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, except as provided under s. NR 440.08(2), shall be used to determine compliance with the standards prescribed in sub. (3) as follows:

1. Method 5 or 17 for concentration of particulate matter and associated moisture content;

2. Method 1 for sample and velocity traverses;

3. Method 2 for velocity and volumetric flow rate;

4. Method 3 for gas analysis;

5. Method 9 for measuring opacity from stack emissions and process fugitive emissions and emissions from building vents;

6. Method 22 for measurement of visible fugitive emissions when determining compliance with the standard prescribed in sub. (3)(e).

(b) For Method 5 the following stipulations shall apply:

1. The sampling probe and holder may be operated without heaters if the gas stream being sampled is at ambient temperature;

2. For gas streams above ambient temperature the sampling train shall be operated with a probe and filter temperature high enough to prevent water condensation on the filter but not higher than 121°C (250°F);

3. The minimum sample volume shall be 1.7 dscm (60 dscf).

(c) When determining compliance with the standard prescribed under sub. (3)(b) and (c) the department shall adhere to the following stipulations in addition to those listed in Method 9:

1. The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

2. The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g. road dust). Note that the required observer position relative to the sun (Method 9, Section 2.1) shall be followed.

3. For affected facilities utilizing wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of the emissions is to be made at a point in the plume where the

mist is no longer visible.

4. If emissions from 2 or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, the owner or operator may show compliance with the fugitive opacity standards in sub. (3)(b) and (c) by:

a. Causing the opacity of the combined emission stream from the facilities to meet the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream, or

b. Separating emissions so that the opacity of emissions from each affected facility can be read to determine compliance with the applicable fugitive opacity limits specified for each facility in sub. (3)(b) and (c).

(d) When determining compliance with the standard prescribed under sub. (3)(b) and (c) using Method 9, each performance test shall consist of a minimum of 30 sets of 24 consecutive observations recorded at 15-second intervals, as described in Method 9 at sections 2.4 and 2.5.

(e) When determining compliance with the standard prescribed under sub. (3)(e), using Method 22, the minimum total observation period for each building shall be 75 minutes and each side of the building and the roof shall be observed for a minimum of 15 minutes. Performance tests shall be conducted while all affected facilities inside the building are operating.

(7) REPORTING AND RECORDKEEPING. (a) Each owner or operator seeking to comply with sub. (1)(d) shall submit to the department the following information about the existing facility being replaced and the replacement price of equipment.

1. For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

a. The rated capacity in tons per hour of the existing facility being replaced, and

b. The rated capacity in tons per hour of the replacement equipment.

2. For a screening operation:

a. The total surface area of the top screen of the existing screening operation being replaced, and

b. The total surface area of the top screen of the replacement screening operation.

3. For a conveyor belt:

a. The width of the existing belt being replaced and

b. The width of the replacement conveyor belt.

4. For a storage bin:

a. The rated capacity in tons of the existing storage bin being replaced, and

b. The rated capacity in tons of replacement storage bins.

(b) Each owner or operator seeking to comply with sub. (1)(d) shall submit the following data to the Director of the Emission Standards and Engineering Division, (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711:

1. The information described in par. (a).

2. A description of the control device used to reduce particulate matter emissions from the existing facility and a list of all other pieces of equipment controlled by the same control device; and

3. The estimated age of the existing facility.

(c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurement of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the department of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than $\pm$ 30% for those measurements recorded during the most recent performance test.

(e) The reports required under par. (d) shall be postmarked within 30 days following end of the second and fourth calendar quarters.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance test conducted to demonstrate compliance with the standards set forth in sub. (3) including reports of opacity observations made using Method 9, 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, to demonstrate compliance with sub. (3)(b) and (c) and reports of observations using Method 22, 40 C.F.R. pt. 60, Appendix A, incorporated by reference in s. NR 440.17, to demonstrate compliance with sub. (3)(e).

SECTION 147. NR 440.69(2)(intro.) and (4)(b) are amended to read:

NR 440.69(2)(intro.) DEFINITIONS. As used in this section ~~all,~~ terms not defined in this subsection have the ~~meaning designated~~ meanings given in s. NR 440.02.

(4)(b) An owner or operator subject to the provisions of this section who uses a wet electrostatic precipitator control device to comply with the mass emission standard shall install, calibrate, maintain and operate monitoring devices that measure the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate. In addition the owner or operator shall determine the total residue (total solids) content of the water entering the control device once per day using Method 209A, "Total Residue Dried at 103-105°C," in Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, ~~of 40 C.F.R. pt. 60, Appendix A,~~ incorporated by reference in s. NR 440.17. Total residue shall be reported as percent by weight. All monitoring devices required under this paragraph are to be certified by their manufacturers to be accurate within ~~plus or minus~~ ± 5% over their operating range.

SECTION 148. NR 440.69(5)(e) is repealed.

SECTION 149. NR 440.72 is created to read:

NR 440.72 INDUSTRIAL SURFACE COATING: SURFACE COATING OF PLASTIC PARTS FOR BUSINESS MACHINES. (1) APPLICABILITY AND DESIGNATION OF AFFECTED FACILITY. (a) The provisions of this section apply to each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats.

(b) This section applies to any affected facility for which construction, modification, or reconstruction begins after January 8, 1986.

(2) DEFINITIONS AND SYMBOLS. (a) As used in this section, all terms not defined in this subsection have the meanings given them in s. NR 440.02.

1. "Business machine" means a device that uses electronic or mechanical methods of process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:

a. Products classified as typewriters under SIC Code 3572;

b. Products classified as electronic computing devices under SIC Code 3573;

c. Products classified as calculating and accounting machines under SIC Code 3574;

d. Products classified as telephone and telegraph equipment under SIC Code 3661;

e. Products classified as office machines, not elsewhere classified, under SIC Code 3579; and

f. Photocopy machines, a subcategory of products classified as photographic equipment under SIC Code 3861.

2. "Coating operation" means the use of a spray booth for the application of a single type of coating (e.g., prime coat); the use of the same spray booth for the application of another type of coating (e.g., texture coat) constitutes a separate coating operation for which compliance determinations are performed separately.

3. "Coating solids applied" means the coating solids that adhere to the surface of the plastic business machine part being coated.

4. "Color coat" means the coat applied to a part that affects the color and gloss of the part, not including the prime coat or texture coat. This definition includes fog coating.

5. "Conductive sensitizer" means a coating applied to a plastic substrate to render it conductive for purposes of electrostatic application of subsequent prime, color, texture, or touch-up coats.

6. "Fog coating" (also known as mist coating and uniforming) means a thin coating applied to plastic parts that have molded-in color or texture or both to improve color uniformity.

7. "Nominal 1-month period" means either a calendar month, 30-day month, accounting month, or similar monthly time period that is established prior to the performance test (i.e., in a statement submitted with notification of anticipated actual startup pursuant to s. NR 440.07(1)(b)).

8. "Plastic parts" means panels, housings, bases, covers, and other business machine components formed of synthetic polymers.

9. "Prime coat" means the initial coat applied to a part when more than one coating is applied, not including conductive sensitizers or electromagnetic interference/radio frequency interference shielding coatings.

10. "Spray booth" means the structure housing automatic or manual spray application equipment where a coating is applied to plastic parts for business machines.

11. "Texture coat" means the rough coat that is characterized by discrete, raised spots on the exterior surface of the part.

12. "Touch-up coat" means the coat applied to correct any imperfections in the finish after color or texture coats have been applied.

13. "Transfer efficiency" means the ratio of the amount of coating solids deposited onto the surface of a plastic business machine part to the total amount of coating solids used.

14. "VOC emissions" means the mass of VOCs emitted from the surface coating of plastic parts for business machines expressed as kilograms of VOCs per liter of coating solids applied (i.e, deposited on the surface).

(b) As used in this section, all symbols not defined in this subsection have the meanings given them in s. NR 440.03.

D_c = density of each coating as received (kilograms per liter)

D_d = density of each diluent VOC (kilograms per liter)

L_c = the volume to each coating consumed, as received (liters)

L_d = the volume of each diluent VOC added to coatings (liters)

L_s = the volume of coating solids consumed (liters)

M_d = the mass of diluent VOCs consumed (kilograms)

M_o = the mass of VOCs in coatings consumed, as received (kilograms)

N = the volume-weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter)

T = the transfer efficiency for each type of application equipment used at a coating operation (fraction)

T_{avg} = the volume weighted average transfer efficiency for a coating operation (fraction)

V_s = the proportion of solids in each coating, as received (fraction by volume)

W_o = the proportion of VOCs in each coating, as received (fraction by weight)

(3) STANDARDS FOR VOLATILE ORGANIC COMPOUNDS. (a) Each owner or operator of any affected facility which is subject to the requirements of this section shall comply with the emission limitations set forth in this subsection on and after the date on which the initial performance test, required by s. NR 440.08 and sub. (4) is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, which ever date comes first. No affected facility may cause the discharge into the atmosphere in excess of:

1. 1.5 kilograms of VOCs per liter of coating solids applied from prime coating of plastic parts for business machines.

2. 1.5 kilograms of VOCs per liter of coating solids applied from color coating of plastic parts for business machines.

3. 2.3 kilograms of VOCs per liter of coating solids applied from texture coating of plastic parts for business machines.

4. 2.3 kilograms of VOCs per liter of coatings solids applied from touch-up coating of plastic parts for business machines.

(b) All VOC emissions that are caused by coating applied in each affected facility, regardless of the actual point of discharge of emissions into the atmosphere, shall be included in determining compliance with the emission limits in par. (a).

(4) PERFORMANCE TESTS AND COMPLIANCE PROVISIONS. (a) Section NR 440.08(4) and (5) does not apply to the performance test procedures required by this subsection.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under s. NR 440.08(1) and thereafter a performance test each nominal 1-month period for each affected facility according to the procedures in this subsection.

1. The owner or operator shall determine the composition of coatings by analysis of each coating, as received, using Reference Method 24 of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, from data that have been determined by the coating manufacturer using Reference Method 24, or by other methods approved by the administrator.

2. The owner or operator shall determine the volume of coating and the mass of VOC used for dilution of coatings from company records during each nominal 1-month period. If a common coating distribution system serves more than one affected facility or serves both affected and nonaffected spray booths, the owner or operator shall estimate the volume of coatings used at each facility by using procedures approved by the department.

a. The owner or operator shall calculate the volume-weighted average mass of VOCs in coatings emitted per unit volume of coating solids applied (N) at each coating operation (i.e., for each type of coating used, prime, color, texture, or touch-up) during each nominal 1-month period for each affected facility. Each 1-month calculation is considered a performance test. Except as provided in subpar. c., N will be determined by the following procedures:

1) Calculate the mass of VOCs used ($M_o + M_d$) for each coating operation during each nominal 1-month period for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

where n is the number of coatings of each type used during each nominal 1-month period and m is the number of different diluent VOCs used during each nominal 1-month period. ($\Sigma L_{dj} D_{dj}$ will be 0 if no VOCs are added to the coatings, as received.)

2) Calculate the total volume of coating solids consumed (L_s) in each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

where n is the number of coatings of each type used during each nominal 1-month period.

3) Select the appropriate transfer efficiency (T) from Table 1 for each type of coating applications equipment used at each coating operation. If the owner or operator can demonstrate to the satisfaction of the administrator that transfer efficiencies other than those shown are appropriate, the administrator may approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below may be approved by the administrator on a case-by-case basis. An owner or operator shall submit sufficient data for the administrator to judge the validity of the transfer efficiency claims.

4) Where more than one application method is used within a single coating operation, the owner or operator shall determine the volume of each coating applied by each method through a means acceptable to the department and compute the volume-weighted average transfer efficiency by the following equation:

$$T_{avg} = \frac{\sum_{i=1}^{n} \sum_{k=1}^{p} L_{cik} V_{sik} T_k}{L_s}$$

TABLE 1. - TRANSFER EFFICIENCIES

Application methods	Transfer efficiency	Type of coating
Air atomized spray	0.25	Prime, color, texture, touch-up, and fog coats.
Air-assisted airless spray	0.40	Prime and color coats.
Electrostatic air spray	0.40	Prime and color coats.

where n is the number of coatings of each type used and p is the number of application methods used.

5) Calculate the volume-weighted average mass of VOCs emitted per unit volume of coating solids applied (N) during each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$N = \frac{M_o + M_d}{L_s T_{avg}}$$

(T_{avg} = T when only one type of coating operation occurs).

b. Where the volume-weighted average mass of VOCs emitted to the atmosphere per unit volume of coating solids applied (N) is less than or equal to 1.5 kilograms per liter for prime coats, is less than or equal to 1.5 kilograms per liter for color coats, is less than or equal to 2.3 kilograms per liter for texture coats, and is less than or equal to 2.3 kilograms per liter for touch-up coats, the affected facility is in compliance.

c. If each individual coating used by an affected facility has a VOC content (kg VOC/l of solids), as received, which when divided by the lowest transfer efficiency at which the coating is applied for each coating operation results in a value equal to or less than 1.5 kilograms per liter for prime and color coats and equal to or less than 2.3 kilograms per liter for texture and touch-up coats, the affected facility is in compliance provided that no VOCs are added to the coatings during distribution or application.

d. If an affected facility uses add-on controls to control VOC emissions and if the owner or operator can demonstrate to the administrator that the volume-weighted average mass of VOCs emitted to the atmosphere during each nominal 1-month period per unit volume of coating solids applied (N) is within each of the applicable limits expressed in subpar. b. because of this equipment, the affected facility is in compliance. In such cases, compliance will be determined by the administrator on a case-by-case basis.

(5) REPORTING AND RECORDKEEPING REQUIREMENTS. (a) The reporting requirements of s. NR 440.08(1) apply only to the initial performance test. Each owner or operator subject to the provisions of this section shall include the following data in the report of the initial performance test required under s. NR 440.08(1).

1. Except as provided for in subd. 2., the volume-weighted average mass of VOCs emitted to the atmosphere per volume of applied coating solids (N) for the initial nominal 1-month period for each coating operation from each affected facility.

2. For each affected facility where compliance is determined under the provisions of sub. (4)(b)2.c., a list of the coatings used during the initial nominal 1-month period, the VOC content of each coating calculated from data determined using Reference Method 24, of Appendix A, 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, and the lowest transfer efficiency at which each coating is applied during the initial nominal 1-month period.

(b) Following the initial report, each owner or operator shall:

1. Report the volume-weighted average mass of VOCs per unit volume of coating solids applied for each coating operation for each affected facility during each nominal 1-month period in which the facility is not in compliance with the applicable emission limits specified in sub. (3). Reports of noncompliance shall be submitted on a quarterly basis, occurring every 3 months following the initial report; and

2. Submit statements that each affected facility has been in compliance with the applicable emission limits specified in sub. (3) during each nominal 1-month period. Statements of compliance shall be submitted on a semiannual basis.

(c) These reports shall be postmarked not later than 10 days after the end of the periods specified in par. (b).

(d) Each owner or operator subject to the provisions of this section shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine monthly VOC emissions from each coating operation for each affected facility as specified in s. NR 440.07(4).

(e) Reporting and recordkeeping requirements for facilities using add-on controls will be determined by the administrator on a case-by-case basis.

(6) TEST METHODS AND PROCEDURES. (a) The reference methods in Appendix A, of 40 C.F.R. pt. 60, incorporated by reference in s. NR 440.17, except as provided under s. NR 440.08(2), shall be used to determine compliance with sub. (3) as follows:

1. Method 24 for determination of VOC content of each coating as received.

2. For Method 24, the sample shall be at least a 1-liter sample in a 1-liter container.

(b) Other methods may be used to determine the VOC content of each coating if approved by the administrator before testing.

The foregoing rule was approved and adopted by the State of Wisconsin Natural Resources Board on January 25, 1990.

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

Dated at Madison, Wisconsin March 14, 1990.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By Carroll D. Besadny
Carroll D. Besadny, Secretary

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Carroll D. Besadny, Secretary
Box 7921
Madison, Wisconsin 53707
TELEFAX NO. 608-267-3579
TDD NO. 608-267-6897

March 14, 1990

Mr. Gary L. Poulson
Assistant Revisor of Statutes
Suite 702
30 W. Mifflin Street

Dear Mr. Poulson:

Enclosed are two copies, including one certified copy, of State of Wisconsin Natural Resources Board Order No. AM-49-89. These rules were reviewed by the Assembly Committee on Environmental Resources and Utilities and the Senate Committee on Urban Affairs, Environmental Resources, Utilities and Elections pursuant to s. 227.19, Stats. Summaries of the final regulatory flexibility analysis and comments of the legislative review committees are also enclosed.

You will note that this order takes effect following publication. Kindly publish it in the Administrative Code accordingly.

Sincerely,

C. D. Besadny
Secretary

Enc.