CR 93-167

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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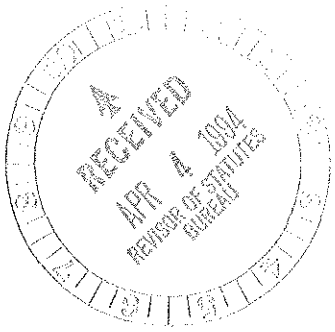
DEPARTMENT OF NATURAL RESOURCES)



TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, George E. Meyer, 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-37-93 was duly approved and adopted by this Department on January 27, 1994. 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 24th day of March, 1994.

George E. Meyer
George E. Meyer, Secretary

(SEAL)

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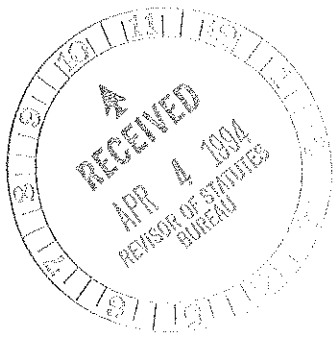

ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD
RENUMBERING AND AMENDING,
AMENDING AND CREATING RULES

IN THE MATTER of **renumbering and amending** NR 446.05, **amending** NR 446.02(intro.) and (2), 446.03(2), 446.04(1)(a), (2)(a), (3)(b) and (d), (4)(a) and (f)(intro.), 3. and 4. and 446.05(title) and **creating** NR 446.02(10m) and 446.05(2) and (3) of the Wisconsin Administrative Code, pertaining to incorporation of revised federal rules for controlling mercury emissions.

AM-37-93

Analysis Prepared by the Department of Natural Resources

Authorizing statutes: ss. 144.31(1)(a), 144.38, 144.375(5), 144.391(6) and 227.11(2)(a), Stats.

Statutes interpreted: s. 144.31(1)(f), Stats.

The federal National Emission Standard for Hazardous Air Pollutants (NESHAP) for Mercury as contained in 40 CFR 61.50 to 61.56 was revised. The Department of Natural Resources is required under state statutes to adopt any new rules or revisions to current federal NESHAP regulations. This order incorporates the new federal provisions into ch. NR 446. The mercury rules are revised to include more recordkeeping and reporting requirements for affected sources. These additional requirements improve the accuracy of determining mercury emissions.

SECTION 1. NR 446.02(intro.) is amended to read:

NR 446.02 DEFINITIONS. ~~In addition to the definitions in this section, the~~ The definitions contained in chs. NR 400 and 445 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

SECTION 2. NR 446.02(2) is amended to read:

NR 446.02(2) "Condenser stack gases" means the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.

SECTION 3. NR 446.02(10m) is created to read:

NR 446.02(10m) "Method X", where "X" is a number or a number followed by a letter, means the specified method contained in Appendix B of 40 CFR part

61, incorporated by reference in ch. NR 484.

SECTION 4. NR 446.03(2) is amended to read:

NR 446.03(1) In quantities greater than 2,300 grams ~~(5.07 pounds)~~ per 24-hour period from mercury cell chlor-alkali plants, or mercury ore processing facilities.

SECTION 5. NR 446.04(1)(a), (2)(a), (3)(b) and (d) and (4)(a), (f)(intro), 3. and 4. are amended to read:

NR 446.04(1)(a) Unless a waiver of emission testing is requested and obtained from the department, each owner or operator of a facility processing mercury ore on which construction or modification commenced after February 1, 1984 shall test emissions from the source in accordance with Method 101 within 90 days after startup.

(2)(a) Unless a waiver of emission ~~test~~ testing is requested and obtained from the department, each owner or operator of a mercury chlor-alkali cell on which construction or modification commenced after February 1, 1984 shall test emissions from ~~the source~~ hydrogen streams in accordance with Method 102 and from end-box gas streams in accordance with Method 101 within 90 days after startup.

(3)(b) Unless a waiver of emission ~~test~~ testing is requested and obtained from the department, each owner or operator of a new or modified chlor-alkali plant shall pass all cell room air in forced gas streams through stacks suitable for testing and shall test emissions from the cell room in accordance with Method 101 within 90 days after startup.

(d) An owner or operator may carry out U.S. environmental protection agency approved design, maintenance and housekeeping practices ~~approved by the department~~.

Note: A list of approved practices is provided in appendix A of "Review of National Emission Standards for Mercury," EPA-450/3-84-014a, December 1984. Copies are available from EPA's Central Docket Section, Docket item number A-84-41, III-B-1.

(4)(a) Unless a waiver of emission testing is requested and obtained

from the department, each owner or operator of sludge incineration plants and drying plants on which construction or modification commenced after February 1, 1984 shall test emissions from the source within 90 days of startup. The tests shall be conducted in accordance with Method 101A ~~or Method 105 in 40 CFR part 61, Appendix B, incorporated by reference in ch. NR 484~~, using the procedures in par. (f).

(f)(intro.) If an owner or operator uses Method 105 ~~of 40 CFR part 61, Appendix B, incorporated by reference in ch. NR 484~~, the following procedures shall be adhered to~~, in addition to Method 105~~:

3. The handling, preparation and analysis of sludge samples shall be accomplished ~~according to~~ in accordance with Method 105.

4. The mercury emissions shall be determined by use of the following equation:

~~$E_{Hg} = 1 \times 10^{-3} cQ$~~

$$E_{Hg} = \frac{MQF_{sm(avg)}}{1000}$$

where:

E_{Hg} is the mercury emissions, ~~grams/day~~ g/day

~~c~~M is the mercury concentration of sludge on a dry solids basis, ~~microgram/gram (parts per million)~~ µg/g

Q is the sludge charging rate, ~~kilogram/day~~ kg/day

$F_{sm(avg)}$ is the average weight fraction of solids in the collected sludge after mixing

1000 is the conversion factor, kg µg/g^2

SECTION 6. NR 446.05(title) is amended to read:

NR 446.05 (title) MONITORING OF EMISSIONS AND OPERATIONS.

SECTION 7. NR 446.05 is renumbered 446.05(1) and amended to read:

NR 446.05(1) All wastewater treatment plant sludge incineration and drying plants for which mercury emissions exceed 1600 grams/day, demonstrated

either by stack sampling or sludge sampling according to s. NR 439.04(4), shall monitor mercury emissions at intervals of at least once per year ~~by use of~~ in accordance with Method 105 ~~of 40 CFR part 61, Appendix B, incorporated by reference in ch. NR 484,~~ or the procedures specified in s. NR 446.04(4)(f). The results of monitoring shall be reported to the department by registered letter dispatched before the close of the next business day following the monitoring. The results shall be retained at the source and shall be made available for inspection by a department representative for a minimum of 2 years.

SECTION 8. NR 446.05(2) and (3) are created to read:

NR 446.05(2) The owner or operator of each mercury cell chlor-alkali plant—hydrogen and end-box ventilation gas streams shall:

(a) Perform a mercury emission test that demonstrates compliance with the emission limits in s. NR 446.03(2)(a) on the hydrogen stream by Method 102 and on the end-box stream by Method 101 for the purpose of establishing limits for parameters to be monitored, within one year after the effective date of this rule .... [revisor inserts date] or within one year of startup for a plant with initial startup after February 1, 1984.

(b) Monitor and record manually or automatically at least once every 15 minutes during the tests specified in par. (a) all of the following control device parameters, except as provided in par. (c):

1. The exit gas temperature from uncontrolled streams.

2. The outlet temperature of the gas stream for the final cooling system when no control devices other than coolers and demisters are used.

3. The outlet temperature of the gas stream from the final cooling system when the cooling system is followed by a molecular sieve or carbon adsorber.

4. Outlet concentration of available chorine, pH, liquid flow rate and inlet gas temperature of chlorinated brine scrubbers and hypochlorite scrubbers.

5. The liquid flow rate and exit gas temperature for water scrubber.

6. The inlet gas temperature of carbon adsorption systems.

7. The temperature during the heating phase of the regeneration cycle for carbon adsorbers or molecular sieves.

(c) Average the parameters recorded in par. (b) over a minimum 6 hour test period. The highest temperature reading that is measured in par. (b)7 is to be identified as the reference temperature for use in par. (f)2.

(d) Monitor and record manually or automatically immediately after the completion of the emission tests specified in par. (a) the following:

1. The parameters specified in par. (b)1 to 6 at least once per hour.

2. The temperature specified in par. (b)7 during each heating phase of the regeneration cycle.

(e) Operate, maintain and calibrate monitoring devices according to the manufacturer's instructions. Monitoring devices used in accordance with pars. (b) and (d) shall be certified by their manufacturer to be accurate to within 10 %. Records of the certifications and calibrations shall be retained at the chlor-alkali plant and made available for inspection by the department as follows: certification, for as long as the device is used for this purpose; and calibration, for a minimum of 2 years.

(f) Notify the department within 10 days when:

1. The hourly value of a parameter monitored in accordance with par. (d)1 exceeds, or, in the case of liquid flow rate and available chlorine, falls below, the value of that same parameter determined in par. (b) for 24 consecutive hours, and

2. The maximum hourly value of the temperature measured in accordance with par. (d)2 is below the reference temperature recorded according to par. (c) for 3 consecutive regeneration cycles.

(g) Submit semiannual reports to the department indicating the time and date on which the hourly value of each parameter monitored according to par. (d)1 and 2 fell outside the value of that same parameter determined under par. (c) and corrective action taken, and the time and date of the corrective

action. Parameter excursions shall be considered unacceptable operation and maintenance of the emission control system. In addition, while compliance with the emission limits is determined primarily by conducting a performance test according to the procedures in s. NR 446.04(2), reports of parameter excursions may be used as evidence in judging the duration of a violation that is determined by a performance test.

(h) Submit semiannual reports required in par. (g) to the department on September 15 and March 15 of each year. The first semiannual report is to be submitted following the first full 6 month reporting period. The semiannual reports due on September 15 and March 15 shall include all excursions monitored during the 6 calendar months previous to the report date.

(3) The owner or operator may develop and submit for the department's approval a plant-specific monitoring plan as an alternative to the monitoring, recordkeeping and reporting requirements of sub. (2)(a) to (g). Approval of an alternative plan shall ensure compliance with the emission limits of s. NR 446.03(1), and proper operation and maintenance of emissions control systems. Any site-specific monitoring plan shall, at a minimum, include all of the following:

(a) Identification of the critical parameter or parameters for the hydrogen stream and for the end-box ventilation stream that are to be monitored and an explanation of why the critical parameters selected are the best indicators of proper control system performance and of mercury emission rates.

(b) Identification of the maximum or minimum value of each parameter that is not to be exceeded. The levels shall be directly correlated to the results of a performance test, conducted no more than 180 days prior to submittal of the plan, when the facility was in compliance with the emission limits of s. NR 446.03(1).

(c) Designation of the frequency for recording the parameter measurements, with justification if the frequency is less than hourly. A longer recording frequency shall be justified on the basis of the amount of

time that could elapse during periods of process or control system upsets before the emission limits would be exceeded, and consideration is to be given to the time that would be necessary to repair the failure.

(d) Designation of the immediate actions to be taken in the event of an excursion beyond the value of the parameter established in par. (b).

(e) Provisions for reporting, semiannually, parameter excursions and the corrective actions taken, and provisions for reporting within 10 days any significant excursion.

(f) Identification of the accuracy of the monitoring devices or of the readings obtained.

(g) Recordkeeping requirements for certifications and calibrations.

Note: The owner or operator of a mercury cell chlor-alkali plant, cell room ventilation system determining cell room emissions, shall maintain records of any leak or spill or mercury. The records shall indicate the amount, location, time and date when the leak or spill occurred, identify the cause of the leak or spill, state the immediate steps taken to minimize mercury emissions and steps taken to prevent future occurrences and provide the time and date on which corrective steps were taken. The results of monitoring shall be recorded, retained at the source and made available for inspection be the Administrator for a minimum of 2 years.

The foregoing rule was approved and adopted by the State of Wisconsin Natural Resources Board on January 27, 1994.

The rule shall take effect 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 3/24/94.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By George E. Meyer
George E. Meyer, Secretary

(SEAL)