MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

PART 8. EMISSION LIMITATIONS AND PROHIBITIONS—OXIDES OF NITROGEN

R 336.1801 Emission of oxides of nitrogen from non-sip call stationary sources.

Rule 801. (1) As used in this rule:

(a) "Capacity factor" means either of the following:

(i) The ratio of a unit's actual annual electric output, expressed in megawatt hour, to the unit's nameplate capacity times 8,760 hours.

(ii) The ratio of a unit's annual heat input, expressed in million British thermal units or equivalent units of measure, to the unit's maximum design heat input, expressed in million British thermal units per hour or equivalent units of measure, times 8,760 hours.

(b) "Fossil fuel-fired" means the combustion of fossil fuel, alone or in combination with any other fuel, where the fossil fuel actually combusted comprises more than 50% of the fuel mass or annual heat input on a British thermal unit basis. Coke oven gas is a fossil fuel.

(c) "Low-NOx burners" means 1 of several developing combustion technologies used to minimize the formation of emissions of nitrogen oxides. As applicable to cement kilns, low-NOx burners means a type of cement kiln burner system designed to minimize NOx formation by controlling flame turbulence, delaying fuel/air mixing, and establishing fuel-rich zones for initial combusting, that for firing of solid fuel in the burning end zone of a kiln's main burner includes an indirect firing system or comparable technique for the main burner in the burning end zone of the kiln to minimize the amount of primary air supplied through the burner. In an indirect firing system, 1 air stream is used to convey pulverized fuel from the grinding equipment and at least 1 or more other air streams are used to supply primary air to the burning end zone kiln burner of the kiln with the pulverized fuel, with intermediate storage of the fuel, and necessary safety and explosion prevention systems associated with the intermediate storage of fuel.

(d) "Mid-kiln system firing" means the secondary firing in a kiln system by injecting solid fuel at an intermediate point in the kiln system using a specially designed heat injection mechanism for the purpose of decreasing NOx emissions through coal burning part of the fuel at lower temperatures and reducing conditions at the fuel injection point that may destroy some of the NOx.

(e) "Non-sip call source" means any stationary source of oxides of nitrogen emissions that is not defined as an oxide of nitrogen budget source in R 336.1803.

(f) "Ozone control period" means the period of May 31, 2004, through September 30, 2004, and the period of May 1 through September 30 each subsequent and prior year.

(g) "Peaking unit" means a unit that has an average capacity factor of not more than 10% during the previous 3 calendar years and a capacity factor of not more than 20% in each of those calendar years.

(h) "Process heater" means any combustion equipment which is fired by a liquid fuel or a gaseous fuel, or both, and which is used to transfer heat from the combustion gases to a process fluid, superheated steam, or water.

(i) "Unit" means a fossil fuel-fired combustion device.

(j) "Utility system" means all interconnected units and generators which are subject to subrule

(2) of this rule and which are operated by the same utility operating company or by common ownership and control.

(2) An owner or operator of a fossil fuel-fired, electricity-generating utility unit which has the potential to emit more than 25 tons each ozone control period of oxides of nitrogen and which serves a generator that has a nameplate capacity of 25 megawatts or more shall comply with the emission limits during the ozone control period as follows:

(a) By May 31, 2004, meet the least stringent of a utility system-wide average oxides of nitrogen emission rate of 0.25 pounds per million British thermal units heat input or an emission rate based on a 65% reduction of oxides of nitrogen from 1990 levels.

(b) The date listed in subdivision (a) of this subrule may be extended by up to 2 years if an owner or operator makes an acceptable demonstration to the department that the additional time is necessary to avoid disruption of the energy supply in the state or if the additional time is necessary to comply with the provisions of this rule.

(3) An owner or operator shall demonstrate compliance with the emission limits in subrule (2) of this rule as follows:

(a) To demonstrate compliance with a utility system-wide average emission rate, the owner or operator shall show that the sum of the mass emissions from all units owned or operated by a utility that is subject to subrule (2) of this rule which occurred during the ozone control period, divided by the sum of the heat input from all units owned or operated by a utility that is subject to subrule (2) of this rule which occurred during the ozone control period is less than or equal to the limits in subrule (2) of this rule.

(b) To demonstrate compliance with the percent reduction requirements of subrule (2) of this rule, the owner or operator shall provide calculations showing that the utility system average emission rate during each compliance ozone control period has been reduced below the 1990 ozone control period average emission rate by the applicable percent reduction listed in subrule (2) of this rule. The 1990 ozone control period average emission rate is the sum of the mass emissions from all units owned or operated by a utility that is subject to subrule (2) of this rule which occurred during the 1990 ozone control period divided by the sum of the heat input from all units owned or operated by a utility that is subject to subrule (2) of this rule which occurred during the 1990 ozone control period.

(4) By May 31, 2004, an owner or operator of a fossil fuel-fired emission unit which has the potential to emit more than 25 tons of oxides of nitrogen each ozone control period, except for an emission unit that is subject to subrule (2) of this rule, and which has a maximum rated heat input capacity of more than 250 million British thermal units per hour shall comply with the following provisions, as applicable:

(a) An owner or operator of a fossil fuel-fired, electricity-generating utility unit which serves a generator that has a nameplate capacity of less than 25 megawatts which has a maximum rated heat input capacity of more than 250 million British thermal units per hour shall comply with the appropriate oxides of nitrogen emission limit in table 81 of this rule.

(b) An owner or operator of a fossil fuel-fired boiler or process heater shall meet the emission limits contained in table 81 of this rule.

(c) An owner or operator of a gas-fired boiler or process heater that fires gaseous fuel which contains more than 50% hydrogen by volume shall comply with an oxide of nitrogen emission limit of 0.25 pounds per million Btu heat input.

(d) An owner or operator of a stationary internal combustion engine which is subject to the provisions of this rule and which has a maximum rated heat input capacity that is the heat input at

80 degrees Fahrenheit at sea level and takes into account inlet and exhaust losses shall comply with the following oxides of nitrogen emission limits, as applicable:

(i) For a natural gas-fired stationary internal combustion engine - 14 grams of oxides of nitrogen per brake horsepower hour at rated output.

(ii) For a diesel-fired stationary internal combustion engine - 10 grams of oxides of nitrogen per brake horsepower hour at rated output.

(e) An owner or operator of a cement kiln that is subject to the provisions of this rule shall reduce kiln oxides of nitrogen emissions by any of the following methods:

(i) Low oxides of nitrogen burners.

(ii) Mid-kiln system firing.

(iii) A 25% rate-based reduction of oxides of nitrogen from 1995 levels. Compliance with this paragraph shall be based on calculations showing that the emission rate, on a pounds of oxides of nitrogen per ton of clinker produced basis, during each compliance ozone control period, has been reduced below the 1995 ozone control period emission rate by 25%.

(f) An owner or operator of a stationary gas turbine which is subject to the provisions of this rule and which has a maximum rated heat input capacity that is the heat input at 80 degrees Fahrenheit at sea level and takes into account inlet and exhaust losses shall comply with an emission limit of 75 parts per million, dry volume, corrected to 15% oxygen, at rated capacity. The provisions of this rule do not apply to a stationary gas turbine that is subject to a new source performance standard contained in 40 C.F.R. part 60, subpart gg, which is adopted by reference in R 336.1802a.

(g) An owner or operator of an emission unit which is subject to this rule and which is not otherwise subject to the provisions of subdivisions (a) to (f) of this subrule shall submit a proposal for oxides of nitrogen control by November 17, 2000. An owner or operator shall implement the control program by May 31, 2004, or by an alternate date approved by the department. The owner or operator shall obtain department approval of the proposed control program. The proposal for oxides of nitrogen control shall include all of the following information:

(i) A listing of reasonably available oxides of nitrogen control technologies, including the costs of installation and operation, cost of control per ton of oxides of nitrogen reduced, and the projected effectiveness of the proposed control technologies. The owner or operator shall use costing methodologies acceptable to the department.

(ii) The technology selected for controlling oxides of nitrogen emissions from the emission unit, considering technological and economic feasibility.

(iii) A proposal for testing, monitoring, and reporting oxides of nitrogen emissions.

(h) The compliance date listed in this subrule may be extended by up to 2 years if an owner or operator makes an acceptable demonstration to the department that the additional time is necessary to comply with the provisions of this rule. The owner or operator of a unit subject to subrules (2) and 4(a) to (f) of this rule may request an alternate emission limit or control requirement if there is an acceptable demonstration made to the department that compliance with the limits in table 81, or other limits or control requirements, is not reasonable. The request for an alternate emission limit or control requirement shall be submitted to the department within 60 days of the effective date of this amendatory rule and shall include all of the information listed in subdivision (g)(i) to (iii) of this subrule.

(5) The method for determining compliance with the emission limits in subrule (4) of this rule is as follows:

(a) If the emission limit is in the form of pounds of oxides of nitrogen per million British

thermal unit, then the unit is in compliance if the sum of the mass emissions from the unit that occurred during the ozone control period, divided by the sum of the heat input from the unit that occurred during the ozone control period, is less than or equal to the limit in subrule (4) of this rule.

(b) For an emission unit not subject to subdivision (a) of this subrule, the method for determining compliance shall be a method acceptable to the department.

(6) An owner or operator of a source of oxides of nitrogen that is subject to the provisions of this rule may participate in Michigan's emission trading program, being R 336. 2201 to R 336.2218.

(7) The owner or operator of an emission unit subject to subrule (2) of this rule shall measure oxides of nitrogen emissions with a continuous emission monitoring system; an alternate method as described in 40 C.F.R. part 60 or 75 and acceptable to the department; or a method currently in use and acceptable to the department, including methods contained in existing permit conditions. The provisions of 40 C.F.R. parts 60 and 75 are adopted by reference in R 336.1802a.

(8) The owner or operator of a boiler, process heater, stationary internal combustion engine, stationary gas turbine, cement kiln, or any other stationary emission unit that is subject to the provisions of subrule (4) of this rule shall measure oxides of nitrogen emissions by any of the following:

(a) Performance tests described in subrule (9) of this rule.

(b) Through the use of a continuous emission monitor in accordance with the provisions of subrule (11) of this rule.

(c) According to a schedule and using a method acceptable to the department.

(9) An owner or operator of an emission unit that measures oxides of nitrogen emissions by performance tests as specified in subrule (8) of this rule shall do all of the following:

(a) Conduct an initial performance test not later than 90 days after the compliance deadline. For an emission unit that is not in service on or after the compliance deadline, the owner or operator shall contact the department and schedule an alternate initial performance test as agreed to by the department.

(b) After the initial performance test, conduct a compliance performance test each ozone control period or according to the following schedule:

(i) After 2 consecutive ozone control periods in which the emission unit demonstrates compliance, an owner or operator shall conduct performance tests at least once every 2 years during the ozone control period.

(ii) After a total of 4 consecutive ozone control periods in which the emission unit has remained in compliance, an owner or operator shall conduct performance tests at least once every 5 years during the ozone control period.

(c) If an emission unit is not in compliance at the end of an ozone control period, then the owner or operator shall conduct a compliance performance test each ozone control period, but can again elect to use the alternative schedule specified in subdivision (b) of this subrule.

(d) An owner or operator shall submit 2 copies of each compliance performance test to the department within 60 days of completion of the testing. The test results shall be presented and include data as requested in the department format for submittal of source emission test plans and reports. All performance test reports shall be kept on file at the plant and made available to the department upon request.

(10) An owner or operator of an emission unit who is required to conduct performance testing under subrule (8) of this rule shall submit a test plan to the department, not less than 30 days

before the scheduled test date. To ensure proper testing, the plan shall supply the information in the department format for submittal of source emission test plans and reports. The owner or operator shall give the department a reasonable opportunity to witness the tests.

(11) An owner or operator of an emission unit that measures oxides of nitrogen emissions by a continuous emission monitoring system or an alternate method, as specified in subrule (7) or (8) of this rule, shall do either of the following:

(a) Use procedures set forth in 40 C.F.R., part 60, subpart A and appendix B, and comply with the quality assurance procedures in appendix F, or 40 C.F.R., part 75, and associated appendices, as applicable and acceptable to the department. Title 40 C.F.R., parts 60 and 75, are adopted by reference in R 336.1802a.

(b) An owner or operator of an emission unit who uses a continuous emission monitoring system to demonstrate compliance with this rule and who has already installed a continuous emission monitoring system for oxides of nitrogen pursuant to other applicable federal, state, or local rules shall meet the installation, testing, operation, calibration, and reporting requirements specified by federal, state, or local rules.

(12) The owner or operator of an emission unit that is subject to this rule shall submit a summary report, in an acceptable format, to the department within 60 days after the end of each ozone control period. The report shall include all of the following information:

(a) The date, time, magnitude of emissions, and emission rates where applicable, of the specified emission unit or utility system.

(b) If emissions or emission rates exceed the emissions or rates allowed for in the ozone control period by the applicable emission limit, the cause, if known, and any corrective action taken.

(c) The total operating time of the emission unit during the ozone control period.

(d) For continuous emission monitoring systems, system performance information shall include the date and time of each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments. When the continuous monitoring system has not been inoperative, repaired, or adjusted, the information shall be stated in the report.

(13) Table 81 reads as follows:

Table 81

Boilers and process heaters with heat input capacity of 250 million Btu or more oxides of nitrogen (NOx) emission limitations (pounds NOx per million Btu of heat input averaged over the ozone control period)	
Fuel type	Emission limit
Natural gas	0.20
Distillate oil	0.30
Residual oil	0.40
Coal (1) Coal spreader stoker (2) Pulverized coal fired	 0.40 0.40
Gas (other than natural gas)[1]	0.25

For units operating with a combination of gas, oil, or coal, a variable emission limit calculated as the heat input weighted average of the applicable emission limits shall be used. The emission limit shall be determined as follows:

Emission limit = a(0.20) + b(applicable oil limit) + c(applicable coal limit) + d(0.25)

Where:
a = Is the percentage of total heat input from natural gas
b = Is the percentage of total heat input from oil
c = Is the percentage of total heat input from coal
d = Is the percentage of total heat input from gas (other than natural gas)

[1]This may include a mixture of gases. In this case, natural gas may be part of the mixture.

(14) The provisions of this rule do not apply to the following emission unit or units:

(a) A unit that is subject to oxides of nitrogen standards, which have been promulgated in a federal implementation plan under section 110(c) of the clean air act, required under section 126 of the clean air act, or promulgated in a federal regulation under 40 C.F.R. part 51 or part 60 and which are equally stringent or more stringent than this rule.

(b) A unit that is subject to any other rule included in this part.

(c) A peaking unit. The owner or operator shall retain records of capacity for a period of 5 years demonstrating that the unit meets the definition of a peaking unit. The unit shall become subject to the provisions of this rule on January 1 of the year following failure to meet the peaking unit definition.

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