06- DEPARTMENT OF ENVIRONMENTAL PROTECTION

096 BUREAU OF AIR QUALITY CONTROL

CHAPTER 138: REASONABLY AVAILABLE CONTROL TECHNOLOGY FOR FACILITIES THAT EMIT NITROGEN OXIDES

SUMMARY: This regulation establishes Reasonably Available Control Technology (RACT) standards for stationary sources of Nitrogen Oxides (NO_x) which have the potential to emit quantities of NO_x equal to or greater than 100 tons per year.

1. Applicability

A. Affected facilities.

This regulation shall apply to any existing stationary source that has the potential to emit quantities of NO_x emissions greater than or equal to 100 tons per year.

1. By May 31, 1995, any source located in any area designated by the Federal Government under 40 Code of Federal Regulations, Part 81 as a moderate nonattainment area for ozone shall comply with the standards specified in Section 3.

2. By May 31, 1995, any source located in any area in the state that is not designated by the Federal Government under 40 Code of Federal Regulations, Part 81 as a moderate nonattainment area for ozone shall comply with the standards specified in Sections 3(A), 3(C)-3(O) and Section 4.

3. Unless the results of an EPA-approved modeling demonstration determines that the emission reductions from sources outside the moderate nonattainment area for ozone are excess emission reductions under Section 182(f), any source located in said area shall file an application specified in Section 5 and comply with the standards specified in Section 3 within 12 months of EPA's determination, based on the modeling results.

4. Once an existing source is subject to this Chapter, the source will remain subject to RACT, even if the source's emissions later fall below the applicability level.

B. Exempt facilities and equipment

1. NO_x-emitting equipment that has the potential to emit less than 10 tons per year of NO_x.

2. Emergency standby engines operating less than 500 hours during any consecutive 12 month period that set and maintain the ignition timing of the engine four degrees retarded to standard timing.

2. Definitions

A. Auxiliary/Standby Boiler. "Auxiliary/Standby boiler" means a boiler that emits no more than 100 tons per year of NO_x and is operated to provide steam under the following two conditions:

1. During the peak heating load periods between October 1 through April 30; and

2. During the period between May 1 and September 30 only when the primary steam or power source for a facility is not available for use.

B. Kraft Recovery Boiler. "Kraft recovery boiler" means a boiler used to produce steam and to recover Kraft pulping chemicals consisting primarily of sodium and sulfur compounds by burning black liquor.

C. Large Boiler. "Large boiler" means a steam generating unit that has a heat input of 1500 million BTU per hour or greater.

D. Lime kiln. "Lime kiln" means a unit used to calcine lime mud, which consists primarily of oxidizing calcium carbonate, into quicklime, which is calcium oxide.

E. Low NO_x Burners. "Low NO_x burners" means a commercially available modified combustion burner designed to minimize NO_x formation through low excess air firing, controlled mixing of primary combustion air and fuel (staged air or staged fuel), reducing peak furnace temperature or other burner designs judged to be low NO_x burners by the Department and EPA based on a review of evidence submitted by the subject facility.

F. MgO Recovery Boiler. "MgO recovery boiler" means a boiler used to produce steam and to recover sulfite pulping chemicals consisting primarily of MgO and sulfur compounds by the burning of red liquor.

G. Mid-Size Boiler. "Mid-size boiler" means a steam generating unit that has a heat input of 50 million BTU per hour or greater and less than 1500 million BTU per hour.

H. Potential To Emit. "Potential to emit" means the maximum capacity of a source to

emit NO_x under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit NO_x, including air pollution control equipment, and restrictions on the hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable.

I. Repowering Project Unit. "Repowering project unit" means a NO_x emitting unit for which an owner or operator enters into an enforceable agreement with the Department prior to January 1, 1995 to permanently shut down, dismantle or complete a new installation project of any of its equipment by May 15, 1999.

J. Small Boiler. "Small boiler" means a steam generating unit that has a heat input equal to or greater than 20 million BTU per hour and less than 50 million BTUs per hour.

3. Standards

A. Large Boilers.

Any person owning, leasing, operating or controlling a boiler having an energy input capacity of 1500 million British Thermal Units (BTU) or greater shall comply with the following NO_x emission standard.

1. The NO_x emission rate for large boilers licensed to fire oil shall not exceed 0.30 pounds per million British Thermal Units (BTU) on a 24-hour daily block arithmetic average basis.

2. The NO_x emission rate for large boilers licensed to fire multiple fuels shall not exceed 0.30 pounds per million British Thermal Units (BTU) on a 24-hour daily block arithmetic average basis.

3. Large boilers shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117.

B. Mid-Size Boilers.

Any person owning, leasing, operating or controlling a boiler having an energy input capacity of 50 million BTU per hour or greater and less than 1500 million British Thermal Units (BTU) or greater shall comply with the following NO_x emission standard.

1. The NO_x emission rate for mid-size boilers licensed to fire oil shall not exceed 0.30 pounds per million BTU based on a one hour average unless the facility

installs Low NO_x burners or equivalent strategies.

2. The NO_x emission rate for mid-size boilers licensed to fire biomass shall not exceed 0.30 pounds per million BTU based on a one hour average.

3. The NO_x emission rate for mid-size boilers licensed to fire biomass and oil shall not exceed 0.30 pounds per million BTU based on a one hour average.

4. The NO_x emission rate for mid-size boilers licensed to fire biomass and coal shall not exceed 0.38 pounds per million BTU based on a one hour average.

5. The NO_x emission rate for mid-size boilers licensed to fire biomass and fuels other than oil and coal shall not exceed 0.30 pounds per million BTU based on a one hour average.

6. Mid-size boilers with a heat input of 250 million BTU per hour or greater shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 by May 31, 1995.

7. Mid-size boilers with a heat input of 200 million BTU per hour and less than 250 million BTU per hour shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 by May 31, 1997.

8. For any mid-size boiler which employs the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 compliance will be on a 24-hour daily block arithmetic average basis.

C. Kraft Recovery Boilers.

Any person owning, leasing, operating or controlling a kraft recovery boiler shall comply with the following NO_x emission standards:

1. The NO_x emissions from any kraft recovery boiler shall not exceed 120 parts per million by volume wet basis, corrected to 8% oxygen or 12% carbon dioxide, on a 24-hour daily block arithmetic average basis.

2. Kraft recovery boilers shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117.

D. MgO Recovery Boilers.

Any person owning, leasing, operating or controlling an MgO recovery boiler shall comply with the following NO_x emission standards.

1. The NO_x emissions from any MgO recovery boiler shall not exceed 250 parts per million by volume wet basis, corrected to 4% oxygen on a 24-hour daily block average basis except during acidification.

2. During acidification NO_x emissions from any MgO recovery boiler shall not exceed 1200 parts per million by volume wet basis, corrected to 12% oxygen on a 24-hour daily block average basis.

3. MgO recovery boilers shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117.

E. Lime Kiln.

Any person owning, leasing, operating or controlling a lime kiln shall comply with the following NO_x emission standards.

1. The NO_x emissions from any lime kiln shall not exceed 120 parts per million by volume wet basis, corrected to 10% oxygen, on a one hour average.

2. Compliance for lime kilns shall be determined by stack tests.

F. Refuse Derived Fuel (RDF) Municipal Solid Waste (MSW) Incinerators.

Any person owning, leasing, operating or controlling an RDF MSW incinerator shall comply with the following NO_x emission standards.

1. The NO_x emissions for RDF fired MSW incinerators shall not exceed 180 parts per million by volume, corrected to 7% oxygen, on a 24-hour daily block arithmetic average basis.

2. RDF fired MSW incinerators shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117.

G. Mass Burn Municipal Solid Waste (MSW) Incinerators.

Any person owning, leasing, operating or controlling a mass burn municipal waste incinerator shall comply with the following NO_x emission standards.

1. The NO_x emissions for mass burn MW incinerators shall not exceed 200 parts per million by volume, corrected to 7% oxygen, on a 24-hour daily block arithmetic average basis.

2. Mass burn MW incinerators shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117.

H. Miscellaneous Stationary Sources.

Owners or operators of miscellaneous stationary NO_x sources meeting the applicability criteria of this Chapter and not specified in Sections 3(A) through 3(G) shall conduct an alternative RACT determination and comply with the provisions of Section 3(I).

I. Alternative RACT Determination.

The provisions of Section 3(A) through Section 3(G) and Section 4 shall not apply to an affected facility where the owners or operators comply with each of the following:

1. Within six months of the effective date of this Chapter or after the modeling is defined in Subsection 1(A)(3), submit to the Department for approval an application to amend the facility's existing air emission license to incorporate NO_x RACT which details various options for the reduction of NO_x emissions to the atmosphere. Each application shall include, at a minimum:

a. An inventory of all affected NO_x-emitting equipment at the facility;

b. The maximum capacity of all affected NO_x-emitting equipment;

c. The maximum potential uncontrolled NO_x emissions;

d. An examination of the technical and economic feasibility of available NO_x control techniques for the applicable NO_x emitting equipment for which alternative RACT emission limits are sought, including but not limited to the capabilities of the following NO_x control options:

i. Low-NO_x burners,

ii. Overfire air,

iii. Flue gas reburn,

iv. Burners out of service,

v. Use of alternative fuels,

vi. Selective non-catalytic reduction,

vii. Selective catalytic reduction, and

viii. Alternative operating scenarios.

e. The control option(s) selected, stating emission limits, and test methods to demonstrate compliance;

f. The amount of NO_x that is proposed to be controlled from the affected NO_x-emitting equipment identified in Section 3(I)(1)(a);

g. A schedule for implementation, including a demonstration of compliance; and

h. A means of assessing compliance, including test methods, monitoring devices, recordkeeping and reporting requirement.

2. Submit to the Department other information that is deemed by the Department to be required to determine RACT within 30 days of receipt of such request, unless otherwise provided by the Department.

3. Submit to the Department a schedule for complete installation of control equipment and/or implementation of the NO_x RACT determination as required by the Department Order issued under Section 5.

J. Seasonality Standard.

Facilities subject to Sections 3(A) or 3(B) may choose the following alternative emission limits through the seasonal combustion of different fuels:

1. Large boilers

a. The NO_x emission rate for large boilers during the ozone season dates of May 1 through September 30 shall not exceed 0.2 pounds per million BTU on a 24-hour daily block arithmetic average basis. During the dates of October 1 through April 30, the large boiler shall not exceed 0.3 pounds per million BTU on a 24-hour daily block arithmetic average basis; or

b. The NO_x emission rate for large boilers during the ozone season dates of May 1 through September 30 shall not exceed 0.15 pounds per million BTU on a 24-hour daily block arithmetic average basis. During the dates of October 1 through April 30, the large boiler shall not exceed 0.35 pounds per million BTU on a 24-hour daily block arithmetic average basis.

2. Mid-size boilers

a. The NO_x emission rate for mid-size boilers during the ozone season dates of May 1 through September 30 shall not exceed 0.20 pounds per million BTU based on a one hour average. During the dates of October 1 through April 30, the mid-size boiler shall not exceed 0.40 pounds per million BTU based on a one hour average. For any mid-size boiler which employs the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 compliance will be on a 24-hour daily block arithmetic average basis; or

b. The NO_x emission rate for mid-size boilers during the ozone season dates of May 1 through September 30 shall not exceed 0.15 pounds per million BTU based on a one hour average. During the dates of October 1 through April 30, the mid-size boiler shall not exceed 0.45 pounds per million BTU based on a one hour average. For any mid-size boiler which employs the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 compliance will be on a 24-hour daily block arithmetic average basis.

K. Emissions Averaging.

Any person owning, leasing, operating or controlling any of the units covered in Sections 3(A)-3(E) or Section 4 at any one facility may average the applicable emission rates between units on an equivalent pounds per million BTU basis on a 24-hour daily block arithmetic basis. Continuous emission monitoring systems that satisfy the requirements of Department Regulation Chapter 117 must be employed to allow the use of this provision.

L. Small Boilers

1. Any person owning, leasing, operating or controlling a boiler having an energy input capacity of less than 50 million BTU per hour and equal to or greater than 20 million BTU per hour shall have performed on the boiler an annual tune-up.

2. The following tune-up record keeping requirements are required:

a. A tune-up procedure file must be kept on-site and made available to the Department upon request,

b. An oxygen/carbon monoxide curve or an oxygen/smoke curve must be kept on file,

c. Once the optimum excess oxygen setting has been determined, the owner or operator of a source must periodically verify that the setting remains at that value, and

d. If the minimum oxygen level found is substantially higher than the value provided by the combustion unit manufacturer, the owner or operator must improve the fuel and air mixing, thereby allowing operation with less air.

M. Auxiliary/Standby Boilers.

Any person owning or operating an auxiliary/standby boiler shall be subject to the following:

1. NO_x emissions shall be limited to less than 100 tons per year on a 12 month rolling average basis -beginning on August 1, 1994;

2. The NO_x emissions for the boiler shall not exceed 20 tons per any calendar month; and

3. The auxiliary/standby boilers shall have an annual tune-up and subject to the tune-up recordkeeping requirements specified in Section 3(L)(2).

N. Repowering Project Unit.

Any person owning, leasing, operating or controlling a NO_x-emitting equipment that enters into an enforceable agreement with the Department prior to January 1, 1995 to permanently shut down, dismantle, and complete a repowering project of any of its equipment by May 15, 1999 shall comply with the following:

1. The unit to be shut down or dismantled by May 15, 1999 shall be tuned-up annually. The tune-up shall be performed between March 15 and June 15 of each year, starting in 1995, until the unit is retired, and

2. The repowered facility must meet a NO_x emission limitation that has been determined to be Best Available Control Technology or Lowest Achievable Emission Rate in a license issued by the Department.

O. Compliance Determination.

For any source that employs the use of a continuous emissions monitoring system, periods of startup, shutdown, equipment malfunction and fuel switching shall not be included in determining 24-hour daily block arithmetic average emission rates provided that operating records are available to demonstrate that the facility was being operated to minimize emissions.

4. Phase 1 Mid-Size Boilers Standards.

Any person owning, leasing, operating or controlling a boiler having an energy input capacity of 50 million BTU per hour or greater and less than 1500 million British Thermal Units (BTU) or greater shall comply with the following NO_x emission standards except as provided in Sections (3)(I)-(3)(O):

1. The NO_x emission rate for mid-size boilers licensed to fire oil shall not exceed 0.40 pounds per million BTU based on a one hour average, unless the facility installs Low-NO_x burners or equivalent strategies.

2. The NO_x emission rate for mid-size boilers licensed to fire biomass shall not exceed 0.30 pounds per million BTU based on a one hour average.

3. The NO_x emission rate for mid-size boilers licensed to fire biomass and oil shall not exceed 0.40 pounds per million BTU based on a one hour.

4. The NO_x emission rate for mid-size boilers licensed to fire biomass and coal shall not exceed 0.45 pounds per million BTU based on a one hour average.

5. The NO_x emission rate for mid-size boilers licensed to fire biomass and fuels other than oil and coal shall not exceed 0.30 pounds per million BTU based on a one hour average.

6. Mid-size boilers with a heat input of 250 million BTU per hour or greater shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 by May 31, 1996.

7. Mid-size boilers with a heat input of 200 million BTU per hour and less than 250 million BTU per hour shall demonstrate compliance through the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 by May 31, 1997.

8. For any mid-size boiler which employs the use of a continuous emissions monitoring system that satisfies the requirements of Department Regulation Chapter 117 compliance will be on a 24- hour daily block arithmetic average basis.

5. Compliance Schedule

A. NO_x RACT Application.

The owner or operator of a facility subject to Section 3 or Section 4 shall submit to the Department and the town office where the source is located, no later than 6 months from the effective date of this Chapter, a complete application to amend the facility's existing air emission license to incorporate NO_x RACT. The application shall include:

1. The standard application form and a copy of the public notice;

2. An inventory of all affected NO_x-emitting equipment at the facility, including equipment exempted under Subsection 1(B);

3. Identification of all affected NO_x-emitting equipment at the facility not exempted under Subsection 1(B);

4. The maximum capacity to emit NO_x of each affected NO_x-emitting equipment not exempted under Subsection 1(B);

5. A description of the selected NO_x emission control system;

6. Testing procedures, monitoring procedures, and record keeping and reporting procedures to demonstrate to the satisfaction of the Department and EPA compliance with this Section; and

7. A schedule for implementation of RACT, including a demonstration of compliance.

B. Departmental Approval NO_x RACT Order

1. Within two calendar months of receipt of the application for NO_x RACT the Department shall submit to the owner or operator written notification stating whether the report is sufficient to allow the Department to determine RACT. Whenever the Department deems the information to be insufficient to determine RACT, the Department shall request from the owner or operator the appropriate information.

2. Within six calendar months of receipt of the application, and all other information deemed by the Department to be required to determine RACT, the following shall occur:

a. The Department shall send to the EPA and the owner or operator a draft Order containing:

i. An inventory of all affected NO_x-emitting equipment;

ii. Emission limits for all affected NO_x-emitting equipment;

iii. A schedule requiring compliance with the emission limits;

iv. Procedures for determining initial compliance with the emission limits;

v. Procedures for assessing compliance with the emission limits;

vi. Record keeping requirements; and

vii. Reporting requirements.

b. A copy of the application, supporting documentation, and draft order shall be available at the Department's Augusta office and the applicant shall provide at the town office which the source is located the draft order for 30 calendar days prior to the date upon which the draft order public comment period ends.

c. The applicant shall notify the public, by advertisement in a newspaper of general circulation in the region in which the source is located, at least 30 calendar days prior to the date upon which the draft order public comment period ends. The notice shall announce availability of the draft order, as well as the opportunity for submission of written public comment. The notice shall also announce the date, place and time a public meeting will be held upon request. If the Department's Augusta office receives a written request for a public meeting within 15 calendar days from the date upon which the notice is published, a public meeting will be held on the date and time as scheduled in the public notice.

3. Within 10 calendar months of a receipt of an application, and all other information deemed by the Department to be required to determine RACT submitted pursuant to Section 3 or Section 4, the Department shall issue to the owner or operator a final Order.

BASIS STATEMENT : The primary purpose of the proposed new rule is to reduce the formation of ground level ozone production. In the presence of sunlight, NO_x, VOC and other compounds in the ambient air react to form ozone.

The new rule is in response to the requirements of the Clean Air Act, as amended by the Clean Air Act Amendments (CAAA) of 1990. Maine is subject to requirements, because it has not attained the National Ambient Air Quality Standards for Ozone. EPA has designated seven counties as being in "moderate" nonattainment and two counties as "marginal" nonattainment.

The 1990 CAAA directs states to require major stationary sources, sources with the potential to emit 100 tons per year of NO_x, to implement RACT. As the State is part of the Ozone Transport Region, NO_x RACT (Reasonably Available Control Technology) for major sources is applicable statewide.

In addition to the Basis Statement above, the Department has filed with the Secretary of State its responses to comments received during the comment period.

AUTHORITY: 38 MRSA Section 585 and 585-A

EFFECTIVE DATE: August 3, 1994