

REGULATION NO. 1142

SPECIFIC EMISSION CONTROL REQUIREMENTS

xx/xx/200x

**2.0 Control of NO<sub>x</sub> Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries**

**2.1 Purpose**

The purpose of Section 2.0 of this regulation is to control NO<sub>x</sub> emissions from industrial boilers and process heaters with heat inputs equal to or greater than 200 million British thermal units per hour (MMBTU/hr).

Under the 8-hour ozone national ambient air quality standard (NAAQS), the state of Delaware is a part of the Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ moderate non-attainment area (NAA). The entire NAA, including Delaware, is required by the Clean Air Act (CAA) to attain the 8-hour ozone NAAQS by 2010. By implementing Section 2.0 this regulation, NO<sub>x</sub> emission reductions from the affected boilers and heaters shall contribute to (1) attainment of the 8-hour ozone standard and (2) improvement of the ambient air quality, in both Delaware and the entire NAA.

Additionally, New Castle County in Delaware is a part of the Philadelphia-Wilmington-Camden, PA-DE-NJ NAA for the annual NAAQS of the fine particulate matter (PM<sub>2.5</sub>), and therefore is required by the CAA to attain the NAAQS by 2010. Since NO<sub>x</sub> is a significant precursor to PM<sub>2.5</sub> formation, reducing NO<sub>x</sub> emissions will also assist in reducing PM<sub>2.5</sub> and attaining its annual standard.

**2.2 Applicability And Effective Date**

**2.2.1** Section 2.0 of this regulation applies to any person that owns or operates any industrial boiler or process heater, inclusive of any carbon monoxide boiler, with a maximum heat input capacity of equal to or greater than 200 million BTUs per hour, which is operated within a petroleum refinery facility.

**2.2.2** The requirements of Section 2.0 of this regulation are in addition to all other state and federal requirements.

**2.2.3** This regulation shall become effective on xx/xx/200x. Any person subject to Section 2.0 of this regulation shall comply with the requirements of Section 2.3 of this regulation as soon as practicable, but no later than December 31, 2008.

## **2.3 Standards**

**2.3.1** Except as provided in Section 2.3.1.3, the NO<sub>x</sub> emission rates of affected units subject to Section 2.0 of this regulation, with the exception of carbon monoxide (CO) boilers, shall not exceed the following:

**2.3.1.1** 0.04 lb/mmBTU, on 24-hour rolling average period for any single unit, and

**2.3.1.2** 0.03 lb/mmBTU, averaged annually for all affected units using the following method:

$$R_n = \frac{\sum_{i=1}^n E_i}{\sum_{i=1}^n H_i} \leq 0.03 \text{ lb/mmBTU}$$

where,  $R_n$  is the annual average rate of the  $n$  affected units;  
 $E_i$  is the annual NO<sub>x</sub> emission of the  $i$ th unit in lb;  
 $H_i$  is the annual heat input of the  $i$ th unit in mmBTU.

**2.3.1.3** The owner/operator may petition the Department for an alternative, i.e., case-by-case determination to be made for those units that are unable to meet the rate limit specified in Section 2.3.1.1. Upon application from the owner or operator of the unit for such a case-by case determination, the Department will approve, deny, or modify the determination proposed. Upon receipt of notice of the Department's approval of case-by-case determination proposal, the source shall begin implementing the approved proposal according to the schedule established in this regulation.

**2.3.1.3.1** The Department will submit each case-by-case determination made under this section to the US Environmental Protection Agency for approval as a revision to the State Implementation Plan (SIP). The expense of all public hearings associated with this action shall be borne by the applicant.

**2.3.1.3.2** Application for case-by-case determination shall be submitted to the Department at least six (6) months prior to the

compliance date of this regulation. All case-by-case determinations shall be included in the annual average rate limitation specified in Section 2.3.1.2.

**2.3.2** Except as provided in Section 2.3.2.3, the NO<sub>x</sub> emission rate from any carbon monoxide (CO) boiler subject to Section 2.0 of this regulation shall not exceed the following:

**2.3.2.1** For any coker CO boiler, an annual average concentration of 20 parts per million by volume, dry (ppmvd) at 0 % oxygen on a 365 day rolling average basis and 40 ppmvd at 0 % oxygen on a 7 day rolling average basis; or

**2.3.2.2** For coker CO boiler and cracker CO boiler, a combined average concentration of 20 parts per million by volume, dry (ppmvd) at 0 % oxygen on a 365 day rolling average basis and 40 ppmvd at 0 % oxygen on a 7 day rolling average basis.

**2.3.2.3** The owner/operator may petition the Department for an alternative, i.e., case-by-case determination to be made for those units that are unable to meet the rate limit specified in Section 2.3.2.1. Upon application from the owner or operator of the unit for such a case-by-case determination, the Department will approve, deny, or modify the determination proposed. Upon receipt of notice of the Department's approval of case-by-case determination proposal, the source shall begin implementing the approved proposal according to the schedule established in this regulation.

**2.3.2.3.1** The Department will submit each case-by-case determination made under this section to the US Environmental Protection Agency for approval as a revision to the State Implementation Plan (SIP). The expense of all public hearings associated with this action shall be borne by the applicant.

**2.3.2.3.2** Application for case-by-case determination shall be submitted to the Department at least six (6) months prior to the compliance date of this regulation. All case-by-case determinations shall be included in the annual and 7-day average rate limitations specified in Section 2.3.2.2.

**2.3.3** During periods of natural gas curtailment: a rate subject to the following conditions:

**2.3.3.1** Application to the Department for curtailment shall be submitted at least xx hours (or xx days) prior to the starting date of curtailment period, and shall include

- 2.3.3.1.1** Start date and end date of the curtailment period;
- 2.3.3.1.2** Substitute fuel to be used;
- 2.3.3.1.3** Emission rate of NO<sub>x</sub> with the substitute fuel;
- 2.3.3.1.4** Emission monitoring method to be used during the curtailment;
- 2.3.3.1.5** Recordkeeping and reporting method(s).
- 2.3.3.1.6** Approval of the Department on the above application.

**2.3.4** Monitoring Requirements. Compliance with the NO<sub>x</sub> emission standards specified in 2.3.1 and 2.3.2 of this regulation shall be determined based on CEM data collected in accordance with the appropriate requirements set forth in 40 CFR, Part 60, Appendix B, Performance Specification 2, and the QA/QC requirements in 40 CFR Part 60, Appendix F.

## **2.4** Recordkeeping and Reporting Requirements

**2.4.1** Not later than 180 days after the effective date of Section 2.0 of this regulation, any person subject to Section 2.0 of this regulation shall develop, and submit to the Department for approval, a schedule for bringing the affected emission unit(s) into compliance with the requirements of Section 2.0 of this regulation. Such schedule shall include, at a minimum, all of the following:

**2.4.1.1** The method by which compliance will be achieved

**2.4.1.2** The dates by which the affected person commits to completing the following major increments of progress, as applicable:

**2.4.1.2.1** Completion of engineering

**2.4.1.2.2** Submission of permit applications

**2.4.1.2.3** Awarding of contracts for construction and/or installation

**2.4.1.2.4** Initiation of construction

**2.4.1.2.5** Completion of construction

**2.4.1.2.6** Commencement of trial operation

**2.4.1.2.7** Initial compliance testing

**2.4.1.2.8** Submission of compliance testing reports

**2.4.1.2.9** Commencement of normal operations (in full compliance)

**2.4.2** Any person subject to Section 2.0 of this regulation shall submit to the Department an initial compliance certification no later than May 1, 2008. The initial compliance certification shall, at a minimum, include the following information:

**2.4.2.1** The name and the location of the facility.

**2.4.2.2** The name, address and telephone number of the person responsible for the facility.

**2.4.2.3** Identification of the subject source(s).

**2.4.2.4** The applicable standard.

**2.4.2.5** The method of compliance.

**2.4.2.6** Certification that each subject source is in compliance with the applicable standard.

**2.4.2.7** All records necessary for determining compliance with the standards of this Section shall be maintained at the facility for a period of five years.

**2.4.3** Any person subject to Section 2.0 of this regulation shall, for each occurrence of excess emissions, within thirty (30) calendar days of becoming aware of such occurrence, supply the Department with the following information:

**2.4.3.1** The name and location of the facility.

**2.4.3.2** The subject source(s) that caused the excess emissions.

**2.4.3.3** The time and date of first observation of the excess emissions.

**2.4.3.4** The cause and expected duration of the excess emissions.

**2.4.3.5** The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions.

**2.4.3.6** The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

**2.4.4** Any person subject to Section 2.0 of this regulation shall maintain all information necessary to demonstrate compliance with the requirements of this section for a minimum period of five (5) years. Such information shall be immediately made available to the Department upon verbal and written request.