

**RULE 425.3 Portland Cement Kilns (Oxides of Nitrogen)** Adopted 10/13/94

**I. Purpose**

The purpose of this Rule is to limit oxides of nitrogen (NO<sub>x</sub>) emissions from existing Portland cement kilns to levels consistent with Reasonably Available Control Technology to satisfy 1990 Federal Clean Air Act Amendments, Section 182 (f).

**II. Applicability**

The provisions of this Rule shall apply to all Portland cement kilns operated in KCAPCD. It is hereby acknowledged kilns constructed and placed in operation after January 1, 1990 meet new source Best Available Control Technology requirements of Rule 210.1, and exceed requirements of Section V, and; therefore, are not subject to Section VII.

**III. Definitions**

- A. Clinker - the product of a cement kiln from which finished cement is manufactured by milling.
- B. Continuous NO<sub>x</sub> emissions monitoring system (CEM) - an instrument satisfying the requirements of 40 CFR, Part 60.
- C. Portland Cement - cementitious, crystalline compound composed of metallic oxides.
- D. Portland Cement Kiln - a system, including any solid fuel preparation equipment, used to calcine and fuse a mixture of limestone, clay, recycled dust and other raw materials to produce Portland cement.
- E. Start-up - period of time after non-production of clinker during which a cement kiln is heated to operating temperature from a lower temperature and feed rate is increased to normal production levels.
- F. Shut-down - period of time cement kiln is allowed to cool from operating temperature to a lower temperature in preparation for a period of non-production of clinker.

**IV. Exemptions**

The requirements of Section V. of this Rule shall not apply to:

- A. Startup and shutdown as defined in Subsections III.E. and F.; and

- B. Breakdown conditions qualifying under Rule 111.

V. **Requirements**

- A. No person shall operate a Portland cement kiln unless such kiln is equipped with a continuous NOx emissions monitoring system as defined in Subsection III.B. If a kiln's dust collector exhaust system will not accommodate a CEM conforming to 40 CFR, Part 60 criteria, an equivalent calculational and record keeping procedure based upon actual emission testing and correlations with operating parameters (kiln loading, fuel-type, percent excess oxygen, etc.) may be substituted.
- B. Each owner/operator of a Portland cement kiln shall provide NOx Reasonably Available Control Technology (RACT) for his type of kiln. RACT can include, but is not limited to any one or a combination of the following: combustion controls, low-NOx burner(s), staged combustion, and/or use of NOx-reducing fuels.
- C. Any owner/operator of a Portland cement kiln subject to this Rule shall limit NOx emissions to no more than:
  - 1. 11.6 lbs/ton of clinker produced when averaged over any 24 consecutive hour period, and
  - 2. 6.4 lbs/ton of clinker produced when averaged over any 30 consecutive day period.
- D. Should State and/or Federal law be amended, or the District's ozone non-attainment status be changed to not require RACT for Portland cement kilns, implementation of this Rule shall cease.

VI. **Administrative Requirements**

A. **Recordkeeping**

Continuous NOx emissions monitoring system (or Subsection V.A. equivalent) records and clinker production records for each cement kiln shall be maintained at the facility for a period of at least two years and made readily available to District personnel.

B. **Test Methods**

- 1. Oxides of nitrogen stack testing for purposes of this Rule shall be conducted using EPA Test Method 7E.
- 2. Stack gas flow rate testing for purposes of this Rule shall be conducted using EPA Test Method 2.

3. The following formula shall be used to convert uncorrected observed NOx concentration in ppm to tons per day at standard conditions of 68 F and a gas pressure of 29.92 inches of mercury:

$$\frac{\text{Tons NOx}}{\text{day}} = (\text{ppmv NOx}) \frac{(46 \text{ grams})}{\text{mole}} (1.56 \times 10^{-7}) (\text{dscfm}) (0.0120)$$

## VII. **Compliance Schedule**

The owner/operator of any kiln subject to this Rule shall:

- A. Submit a compliance plan no later than May 31, 1995, including a description of how each kiln has already been made to comply with Section V., or a description of all actions to be taken to affect compliance;
- B. If installation of emissions control equipment or devices, or kiln modification is necessary to meet the requirements of Section V., file a complete application for Authority to Construct (ATC) no later than May 31, 1995; and
- C. Demonstrate full compliance with applicable sections of Section V. by May 31, 1997.