Technical Support Document (TSD)

30 Texas Administrative Code (TAC) Chapter 117

Control of Air Pollution from Nitrogen Compounds

Rule project No. 2006-004-117-EN

Dallas - Fort Worth (DFW) Cement Kiln Rule revision

EPA-R06-OAR-2007-1147

Chapter I

Introduction

This Technical Support Document (TSD) concerns review of the 30 Texas Administrative Code (TAC) Chapter 117 Control of Air Pollution from Nitrogen Compounds, rule project No. 2006-004-117-EN: Dallas - Fort Worth Cement Kiln Rule revision. The 30 TAC Chapter 117 was submitted to EPA Region 6, Air Planning Section, for review and evaluation, on June 19, 2007 (June 2007 submittal or submittal). In this TSD we are evaluating the revision to the Texas State Implementation Plan (SIP) concerning cement kilns. Specifically, we are acting on §117.3100, §117.3101, §117.3103, §117.3110, §117.3120, §117.3123, §117.3125, §117.3140, §117.3142, §117.3145, and §117.9320 at this time. This particular SIP submittal revises the cement kiln related provisions of Chapter 117.

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Subchapter E: Multi-Region Combustion Control -- Division 2: Cement Kilns

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Chapter II

Current EPA-Approved Sections

As stated before, we are evaluating the cement kiln related rule in this TSD. Thus we are including the current EPA-approved Chapter 117 cement kiln-related provisions in tables below. See 59 FR 15681, published March 26, 2004, for reference and comparison purposes.

§117.260. Cement Kiln Definitions.
As adopted by TCEQ 3/5/2003 effective 3/27/2003 (7-24).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

Unless specifically defined in the Texas Clean Air Act (TCAA) or in the rules of the commission, the terms used by the commission have the meanings commonly used in the field of air pollution control. In addition to the terms which are defined by the TCAA, the following terms, when used in this division, shall have the following meanings, unless the context clearly indicates otherwise. Additional definitions for terms used in this division are found in §§3.2, 101.1, and 117.10 of this title (relating to Definitions).

(1) **Clinker** - The product of a portland cement kiln from which finished cement is manufactured by milling and grinding.

(2) **Indirect-firing system** - A system which reduces the amount of primary air used in a cement kiln by:

(A) separating the powdered fuel from the air stream that carries the fuel from the drying/milling equipment;

(B) storing the fuel briefly; and

(C) using an independent, significantly smaller stream of hot primary air to blow the fuel to the burner.

(3) **Long dry kiln** - A kiln which employs no preheating of the dry feed. The inlet feed to the kiln is dry.

(4) **Long wet kiln** - A kiln which employs no preheating of the dry feed. The inlet feed to the kiln is a slurry.

(5) **Low-NOx burner** - Either of the following:

(A) for long wet kilns, combustion equipment designed to reduce flame turbulence, delay fuel/air mixing, and establish fuel-rich zones for initial combustion; or

(B) a type of cement kiln burner that results in decreasing nitrogen oxides (NOx) emissions and which has an indirect-firing system and a series of channels or orifices that:

(i) allow for the adjustment of the volume, velocity, pressure, and direction of the air carrying the fuel (known as primary air) and the combustion air (known as secondary air) into the kiln; and

(ii) impart high momentum and turbulence to the fuel stream to facilitate mixing of the fuel and secondary air.

(6) **Low-NOx precalciner** - A process in which a portion of the fuel is injected near the raw material feed end of a preheater or precalciner kiln, resulting in a reducing atmosphere in the preheater or precalciner.

(7) **Mid-kiln firing** - Secondary combustion in long dry or long wet kilns by injecting solid fuel at (or to) an intermediate point in the kiln using a specially-designed feed injection mechanism for the purpose of decreasing NOx emissions through:

(A) burning part of the fuel at a lower temperature; and

(B) reducing conditions at the solid fuel injection point that may destroy some of the NOx formed upstream in the kiln burning zone.

(8) **Portland cement** - A hydraulic cement produced by pulverizing clinker consisting essentially of hydraulic calcium silicates, usually containing one or more of the forms of calcium sulfate as an interground addition.

(9) **Portland cement kiln** - A system, including any solid, gaseous, or liquid fuel combustion equipment, used to calcine and fuse raw materials, including limestone and clay, to produce portland cement clinker.

(10) **Precalciner kiln** - A kiln where the feed to the kiln system is preheated in cyclone chambers and utilizes a second burner to calcine material in a separate vessel attached to the preheater before the final fusion in a kiln which forms clinker.

(11) **Preheater kiln** - A kiln where the feed to the kiln system is preheated in cyclone chambers before the final fusion in a kiln which forms clinker.

(12) **Secondary combustion** - A system that employs a second combustion point in addition to the primary flame. This definition includes mid-kiln firing in long dry and long wet kilns, and also additional combustion at the raw material feed end of the kiln in preheater-precalciner kilns.

§117.261. Applicability.
As adopted by TNRCC 4/19/2000 effective 5/11/2000 (7-17).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

This division (relating to Cement Kilns) applies to each portland cement kiln in Bexar, Comal, Ellis, Hays, and McLennan Counties that was placed into service before December 31, 1999, except as specified in §117.265 and §117.283 of this title (relating to Emission Specifications; and Source Cap).

§117.265. Emission Specifications.
As adopted by TCEQ 3/5/2003 effective 3/27/2003 (7-24).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

(a) In accordance with the compliance schedule in §117.524 of this title (relating to Compliance Schedule for Cement Kilns), the owner or operator of each portland cement kiln shall ensure that nitrogen oxides (NOx) emissions do not exceed the following rates on a 30-day rolling average. For the purposes of this section, the 30-day rolling average is calculated as the total of

all the hourly emissions data (in pounds) that fuel was combusted in a cement kiln in the preceding 30 consecutive days, divided by the total number of tons of clinker produced in that kiln during the same 30-day period:

(1) for each long wet kiln:

(A) in Bexar, Comal, Hays, and McLennan Counties, 6.0 pounds per ton (lbs/ton) of clinker produced; and

(B) in Ellis County, 4.0 lbs/ton of clinker produced;

(2) for each long dry kiln, 5.1 lbs/ton of clinker produced;

(3) for each preheater kiln, 3.8 lbs/ton of clinker produced; and

(4) for each preheater-precalciner or precalciner kiln, 2.8 lbs/ton of clinker produced.

(b) If there are multiple cement kilns at the same account, the owner or operator may choose to comply with the emission limits of subsection (a) of this section on the basis of a weighted average for the cement kilns at the account that are subject to the same limit. Each owner or operator choosing this option shall submit written notification of this choice to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction before the appropriate compliance date in §117.524 of this title (relating to Compliance Schedule for Cement Kilns).

(c) Each long wet or long dry kiln for which the following controls are installed and operated during kiln operation is not required to meet the NOx emission limits of subsection (a) of this section, provided that each owner or operator choosing this option submits written notification of this choice to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction before the appropriate compliance date in §117.524 of this title:

(1) a low-NOx burner and either:

(A) mid-kiln firing; or

(B) some other form of secondary combustion achieving equivalent levels of NOx reductions; or alternatively;

(2) other additions or changes to the kiln system achieving at least a 30% reduction in NOx emissions, provided the additions or changes are approved by the executive director with concurrence from EPA.

(d) Each preheater or precalciner kiln for which either a low-NOx burner or a low-NOx precalciner is installed and operated during kiln operation is not required to meet the NOx emission limits of subsection (a) of this section. Each owner or operator choosing this option shall submit written notification of this choice to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction before the appropriate compliance date in §117.524 of this title.

(e) An owner or operator may use §117.570 of this title (relating to Use of Emissions Credits for Compliance) to meet the NOx emission control requirements of this section, in whole or in part.

§117.273. Continuous Demonstration of Compliance.

As adopted by TNRCC 4/19/2000 effective 5/11/2000 (7-17).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

(a) Nitrogen oxides (NOx) monitors. In accordance with the compliance schedule in

§117.524 of this title (relating to Compliance Schedule for Cement Kilns), the owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) or predictive emissions monitoring system (PEMS) to monitor kiln exhaust NOx.

(b) CEMS requirements. The owner or operator of any CEMS used to meet the monitoring requirement of subsection (a) of this section must comply with the following.

(1) The CEMS shall meet the requirements of 40 Code of Federal Regulations (CFR), Part 60 as follows:

(A) Section 60.13;

(B) Appendix B, Performance Specification 2, for NOx; and

(C) audits shall be in accordance with Section 5.1 of Appendix F, quality assurance procedures, except that a cylinder gas audit or relative accuracy audit may be performed in lieu of the annual relative accuracy test audit (RATA) required in Section 5.1.1.

(2) One CEMS may be shared among kilns, provided:

(A) the exhaust stream of each kiln is analyzed separately; and

(B) the CEMS meets the certification requirements of paragraph (1) of this subsection for each exhaust stream.

(3) The CEMS shall be subject to the approval of the executive director.

(c) PEMS requirements. The owner or operator of any PEMS used to meet the monitoring requirement of subsection (a) of this section must comply with the following.

(1) The PEMS must predict the NOx emissions in the units of the applicable emission limitations of this division.

(2) The PEMS shall meet the requirements of §117.213(f)(2) - (7) of this title (relating to Continuous Demonstration of Compliance).

§117.279. Notification, Recordkeeping, and Reporting Requirements.
As adopted by TCEQ 3/5/2003 effective 3/27/2003 (7-24).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

(a) Notification. The owner or operator of each portland cement kiln shall submit verbal notification to the executive director of the date of any continuous emissions monitoring system (CEMS) or predictive emissions monitoring system (PEMS) performance evaluation conducted under §117.273 of this title (relating to Continuous Demonstration of Compliance) at least 15 days before such date followed by written notification within 15 days after testing is completed.

(b) Reporting of test results. The owner or operator of each portland cement kiln shall furnish the executive director and any local air pollution control agency having jurisdiction a copy of any CEMS or PEMS relative accuracy test audit conducted under §117.273 of this title:

(1) within 60 days after completion of such testing or evaluation; and

(2) not later than the appropriate compliance date in §117.524 of this title (relating to Compliance Schedule for Cement Kilns).

(c) Recordkeeping. The owner or operator of a portland cement kiln subject to the requirements of this division shall maintain written or electronic records of the data specified in this subsection. Such records shall be kept for a period of at least five years and shall be made available upon request by authorized representatives of the executive director, EPA, or local air pollution control agencies having jurisdiction. The records shall include:

(1) for each kiln, monitoring records of:

(A) daily and rolling 30-day average (and, for each kiln subject to the source cap in §117.283 of this title (relating to Source Cap), rolling 90-day average) nitrogen oxides (NOx) emissions (in pounds (lbs));

(B) daily and rolling 30-day average (and, for each kiln subject to the source cap in §117.283 of this title, rolling 90-day average) production of clinker (in tons); and

(C) average NOx emission rate (in lbs/ton of clinker produced) on the basis of a rolling 30-day average (and, for each kiln subject to the source cap in §117.283 of this title, a rolling 90-day average);

(2) records of the results of initial certification testing, evaluations, calibrations, checks, adjustments, and maintenance of CEMS and PEMS; and

(3) records of the results of any stack testing conducted.

§117.283. Source Cap.
As adopted by TCEQ 3/5/2003 effective 3/27/2003 (7-24).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

(a) As an alternative to complying with the requirements of §117.265 of this title (relating to Emission Specifications) in Bexar, Comal, Ellis, Hays, and McLennan Counties, an owner or operator may reduce total nitrogen oxides (NOx) emissions (in pounds per day (ppd)) from all cement kilns at the account (including any cement kilns placed into service on or after December 31, 1999) to at least 30% less than the total NOx emissions (in ppd) from all cement kilns in the account's 1996 emissions inventory (EI), on a 90-day rolling average basis. For the purposes of this section, the 90-day rolling average is calculated as the total of all the hourly emissions data for the preceding 90 days. For the calendar year which includes the appropriate compliance date in §117.524 of this title (relating to Compliance Schedule for Cement Kilns), only hourly emissions data on or after that compliance date is included, such that the first 90-day period ends 90 days after the appropriate compliance date in §117.524 of this title. A 90-day rolling average emission cap shall be calculated using the following equation.

NOx 90-day rolling average emission cap (ppd) = 0.7 Ri
Where: i = 1 to N
i = Each cement kiln at a single account
N = The total number of cement kilns at the account
Ri = The kiln's ozone season daily NOx emission rate (in ppd) reported in the account's 1996 EI

(b) To qualify for the source cap option available under this section, the owner or operator must submit an initial control plan to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction which demonstrates that the overall reduction of NOx emissions from all cement kilns at the account will be at least 30% from the 1996 baseline EI on a 90-day rolling average basis. The plan shall be submitted no later than December 31 of the year preceding the appropriate compliance date in §117.524 of this title. Each control plan must be approved by the executive director before the owner or operator may use the source cap available under this section for compliance. At a minimum, the control plan shall include the emission point number (EPN), facility identification number (FIN), and 1996

baseline EI NOx emissions (in ppd) from each cement kiln at the account; a description of the control measures which have been or will be implemented at each cement kiln; and an explanation of the recordkeeping procedure and calculations which will be used to demonstrate compliance.

(c) Beginning on March 31 of the year following the appropriate compliance date in §117.524 of this title, the owner or operator shall submit an annual report no later than March 31 of each year to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction which demonstrates that the overall reduction of NOx emissions from all cement kilns at the account is at least 30% from the 1996 baseline EI on a 90-day rolling average basis. At a minimum, the report shall include the EPN, FIN, and each 90-day rolling average NOx emissions (in ppd) during the preceding calendar year for the cement kilns at the account.

(d) All representations in control plans and annual reports become enforceable conditions. The owner or operator shall not vary from such representations if the variation will cause a change in the identity of the specific cement kilns subject to this section or the method of control of emissions unless the owner or operator submits a revised control plan to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction no later than 30 days after the change. All control plans and reports shall demonstrate that the total NOx emissions (in ppd) from all cement kilns at the account (including any cement kilns placed into service on or after December 31, 1999) are being reduced to at least 30% less than the total NOx emissions (in ppd) from all cement kilns in the account's 1996 EI on a 90-day rolling average basis.

(e) The NOx emissions monitoring required by §117.273 of this title (relating to Continuous Demonstration of Compliance) for each cement kiln in the source cap shall be used to demonstrate continuous compliance with the source cap.

(f) An owner or operator may use §117.570 of this title (relating to Use of Emissions Credits for Compliance) to meet the NOx emission control requirements of this section, in whole or in part.

§117.524. Compliance Schedule for Cement Kilns.
As adopted by TCEQ 3/5/2003 effective 3/27/2003 (7-24).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

(a) The owner or operator of each portland cement kiln which was placed into service before December 31, 1999 in Bexar, Comal, Ellis, Hays, and McLennan Counties shall be in compliance with the requirements of Subchapter B, Division 4 of this chapter (relating to Cement Kilns) as soon as practicable, but no later than the following dates:

(1) May 1, 2003 for cement kilns in Ellis County; and

(2) May 1, 2005 for cement kilns in Bexar, Comal, Hays, and McLennan Counties.

(b) Notwithstanding subsection (a)(1) of this section, for a cement kiln in Ellis County for which the owner or operator has filed an application for modification of its facility to meet

the requirements of Subchapter B, Division 4 of this chapter on or before May 30, 2003, the compliance schedule is extended until six months after the issuance of the permit for operation of a low-NOx burner and 12 months after issuance of the permit for operation of a secondary combustion system. Such application(s) shall relate only to those modifications required to comply with Subchapter B, Division 4 of this chapter, and any issues incident thereto.

§117.570. Use of Emissions Credits for Compliance.
As adopted by TCEQ 3/5/2003 effective 3/27/2003 (7-24).
Approved by EPA 3/26/2004 (69 FR 15681) effective 4/26/2004 (TXd43).

(a) An owner or operator of a unit not subject to Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program) may meet emission control requirements of §117.105 or §117.205 of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)), §117.106 or §117.206 of this title (relating to Emission Specifications for Attainment Demonstrations), §117.107 of this title (relating to Alternative System-wide Emission Specifications), §117.207 of this title (relating to Alternative Plant-wide Emission Specifications), §117.223 or §117.283 of this title (relating to Source Cap), or §§117.135, 117.265, or 117.475 of this title (relating to Emission Specifications) in whole or in part, by obtaining an emission reduction credit (ERC), mobile emission reduction credit (MERC), discrete emission reduction credit (DERC), or mobile discrete emission reduction credit (MDERC) in accordance with Chapter 101, Subchapter H, Division 1 or 4 of this title (relating to Emission Credit Banking and Trading; and Discrete Emission Credit Banking and Trading), unless there are federal or state regulations or permits under the same commission account number which contain a condition or conditions precluding such use.

(b) An owner or operator of a unit subject to §§117.108, 117.138, or 117.210 of this title (relating to System Cap) may meet the emission control requirements of these sections in whole or in part, by complying with the requirements of Chapter 101, Subchapter H, Division 5 of this title (relating to System Cap Trading) or by obtaining an ERC, MERC, DERC, or MDERC in accordance with Chapter 101, Subchapter H, Division 1 or 4 of this title, unless there are federal or state regulations or permits under the same commission account number which contain a condition or conditions precluding such use.

(c) For the purposes of this section, the term "reduction credit (RC)" refers to an ERC, MERC, DERC, or MDERC, whichever is applicable.

(d) Any lower nitrogen oxides (NOx) emission specification established under this chapter for the unit or units using RCs shall require the user of the RCs to obtain additional RCs in accordance with Chapter 101, Subchapter H, Division 1 or 4 of this title and/or otherwise reduce emissions prior to the effective date of such rule change. For units using RCs in accordance with this section which are subject to new, more stringent rule limitations, the owner or operator using the RCs shall submit a revised final control plan to the executive director in accordance with §117.117 or §117.217 of this title (relating to Revision of Final Control Plan) to revise the basis for compliance with the emission specifications of this chapter. The owner or operator using the RCs shall submit the revised final control plan as soon as practicable, but no later than 90 days prior to the effective date of the new, more stringent rule. The owner or operator of the unit(s)

currently using RCs shall calculate the necessary emission reductions per unit as follows.

$$delta\ E = [LA \times (EROLD - ERNEW) \times (d/365)]$$

Where:

delta E = the differential of emissions

LA = the maximum level of activity

EROLD = the existing NOx emission rate for the affected in lb per unit of activity

ERNEW = the new NOx emission rate for the affected unit in lb per unit of activity

d = (i) to calculate annual emission reductions, *d* = 365
(ii) to calculate emission reductions for the remainder of a control period, *d* = the number of days remaining in the control period

Chapter III

Section by Section Analysis

Below is a review of the revised sections of cement kiln related NOx rules.

Section 117.3100, Applicability

New §117.3100 incorporates the applicability rule language from existing §117.261. In addition, the language in existing §117.261, regarding applicability of the rule to units placed into service before December 31 1999, is moved to the new §117.3103, Exemptions.

- The adopted provisions are consistent with the EPA approved Texas SIP of 117.261, thus should be given approval.

Section 117.3101, Cement Kiln Definitions

New §117.3101 incorporates the definition rule language from existing §117.260.

- The adopted provisions are consistent with the EPA approved Texas SIP of 117.260, thus should be given approval.

Section 117.3103, Exemptions

The new §117.3103, concerning exemptions, incorporates the exemption in applicability language of existing §117.261 that exempted certain units placed into service on or after December 31, 1999, and adopts a new exemption regarding units subject to new §117.3123. The new §117.3103(a) specifies that units exempted from the division include any portland cement kiln placed into service on or after December 31, 1999, except as specified in new §§117.3110, 117.3120, and 117.3123. New §117.3110 and §117.3120 are corresponding new sections that incorporate existing rule language from existing §117.265 and §117.283, respectively, which are already referenced in the existing language in §117.261. The reference to new §117.3123 is necessary to ensure that cement kilns located at existing accounts in Ellis County, regardless of date placed into service, are subject to the emission control requirements for the Dallas-Fort Worth eight-hour attainment demonstration described in §117.3123 and other associated requirements discussed later in this preamble.
New §117.3103(b) specifies that any account in Ellis County that had no portland cement kilns in operation prior to January 1, 2001, is exempt from new §117.3123. All existing sources are regulated under the source cap control measure in new §117.3123, including any new kilns placed into service at those accounts. Any newly permitted accounts will be addressed under Nonattainment New Source Review permitting. Adopted §117.3103(c) specifies that, after the compliance date specified in new §117.9320(c), §117.3110 and §117.3120 do not apply to cement kilns subject to §117.3123 between March 1 and October 31 of each calendar year. This

change is necessary because the source cap in §117.3123 only applies during ozone season and the current one-hour ozone rule requirements will remain in effect during non-ozone season. As discussed elsewhere in this preamble, these changes were made based on comments received.

- The adopted provisions incorporate language from EPA approved Texas SIP of 117.261, adopt specificity to accounts located in Ellis County, thus should be given approval.

Section 117.3110, Emission Specifications

New §117.3110 incorporates the rule language regarding emission specifications from existing §117.265. New §117.3110(a) – (e) incorporate the rule language from existing §117.265(a) – (e).

Under the 1-Hour ozone SIP in Table III of 69 FR 15681, published on March 26, 2004 we approved the following NOx requirements for the cement kilns in Texas.

Source	County	NOx emission specification
Long wet kiln	Bexar, Comal, Hays, McLennan	6.0 lb NOx/ton of clinker produced
Long wet kiln	Ellis	4.0 lb NOx/ton of clinker produced
Long dry kiln	Bexar, Comal, Hays, McLennan, Ellis	5.1 lb NOx/ton clinker of produced
Preheater kiln	Bexar, Comal, Hays, McLennan, Ellis	3.8 lb NOx/ton of clinker produced
Precalciner or preheater-precalciner kiln	Bexar, Comal, Hays, McLennan, Ellis	2.8 lb NOx/ton of clinker produced

- The adopted provisions are consistent with the EPA approved Texas SIP of 117.265, thus should be given approval.

Section 117.3120, Source Cap

New §117.3120 incorporates the rule language from existing §117.283. New §117.3120(a) – (f) incorporate the rule language from existing §117.283(a) – (f), respectively. In addition, the new equation in §117.3120(a) that incorporates the equation in existing §117.283(a). The new equation in §117.3120(a) presents the equation in a format consistent with other equations in Chapter 117 and provides a definition for each term used in the equation.

- The adopted provisions are consistent with the EPA approved Texas SIP of 117.283, thus should be given approval.

Section 117.3123, Dallas-Fort Worth Eight-Hour Ozone Attainment Demonstration Control Requirements

The new §117.3123, entitled Dallas-Fort Worth Eight-Hour Ozone Attainment Demonstration Control Requirements, that includes a new mandatory source cap requirement for all units located in Ellis County. New §117.3123(a) specifies that the owner or operator of any portland cement kiln in Ellis County shall not allow the total NOX emissions from all cement kilns located at the account to exceed the source cap limitation in new §117.3123(b). New §117.3123(a) also specifies that compliance with the source cap must be in accordance with the compliance schedule in new §117.9320(c). Based on comments received, the adopted subsection (a) also specifies that the source cap only applies from March 1 through October 31 of each calendar year. Owners or operators must demonstrate compliance with the 30-day rolling average cap beginning on March 31 of each calendar year.

New §117.3123(b) specifies that the NOX source cap for an account subject to new §117.3123 must be calculated according to the equation in new §117.3123(b). Under the adopted rule, the source cap for an account is determined according to the three-year average production rate of the kilns located at the account plus one standard deviation of total production at an account, by kiln type (wet or dry), over the same three years, and a pound per ton of clinker NOX emission factor based on kiln type. The source cap, identified as resultant Cap8hour in the equation, is the total allowable NOX emissions from all cement kilns located at an account in tons per day and on a 30-day rolling average basis. The NOX emission factor to determine the cap contribution from each dry preheater-precalciner or precalciner kiln, variable KD, is 1.7 pounds per ton of clinker. The NOX emission factor to determine the cap contribution from each long wet kiln, variable KW, is 3.4 pounds per ton of clinker. Variables ND and NW are the average annual production in tons of clinker of dry preheater-precalciner or precalciner kilns and long wet kilns, respectively, located at the account for the calendar years 2003, 2004, and 2005, as reported to the Industrial Emissions Assessment Section of the commission, plus one standard deviation of total production at an account, by kiln type (wet or dry), over the same three years. The total source cap for an account subject to new §117.3123 is the product of variables KD and ND, plus the product of variables KW and NW, then converted to tons per day. Cement kilns that began operation after calendar year 2005 are excluded from the calculation of the source cap; however, as described later in this preamble, NOX emissions from cement kilns that began operation after calendar year 2005 are included in the total emissions calculation when determining compliance with the source cap.

The emission factors used for the source cap calculation, KD and KW, were determined based on actual emission data from the sources located in Ellis County. The wet kiln NOX emission factor, 3.4 pounds per ton of clinker, is based on an approximate 35% reduction from Ash Grove's actual average pound per ton of clinker emission rate from 2003 to 2005. The NOX emission factor for dry preheater-precalciner or precalciner kilns, 1.7 pounds per ton of clinker, is based on TXI's dry preheater-precalciner or precalciner kiln actual overall average pound per ton of clinker emission rate since 2001. The 1.7 pounds per ton of clinker emission factor represents an approximate 45 - 50% reduction from Holcim's pound per ton of clinker emission rate for 2001. The rationale for the different approaches is to recognize the best performing kilns for each category while establishing a cap approach that requires feasible and equitable reductions from all three sites.

The different approaches for the two types of kilns is also due to significant differences in the pound per ton of clinker NOX emissions from kilns of the same category located at different sites. While TXI's dry preheater-precalciner or precalciner kiln is currently meeting or doing better than 1.7 pounds NOX per ton of clinker, the NOX emissions from TXI's wet kilns are substantially higher than Ash Grove's wet kilns. Therefore, under the source cap approach and because the TXI facility in Ellis County has both types of cement kilns, the emission factor used for the dry kilns must be balanced against the more stringent emission factor for wet kilns.

The revised source cap calculation is more equitable than the proposed source cap because it includes all kilns in operation at the three accounts impacted by this rulemaking. The new approach also recognizes those kilns that are performing better, on a pound per ton of clinker basis, than other kilns in the same category. In addition, based on evaluation of recent emission inventory trend data, the proposed source cap approach may have inadvertently penalized certain sources that have made substantial reductions since 2001 by requiring those sources to potentially make greater reductions than certain other sources that have shown an upward trend in NOX emissions during the same time. Under the adopted source cap approach, the total NOX source cap for all three accounts will be approximately 16.4 tpd, only 0.6 tpd higher than the emissions modeled for the low-end controls based on the TCEQ's cement kiln study. New §117.3123(c) specifies the NOX emission monitoring requirements of new §117.3142 must be used to demonstrate continuous compliance with the source cap. The adopted §117.3123(d) is revised to specify the requirements that apply to kilns that were not operational prior to calendar year 2006, to reflect the revised source cap approach. New §117.3123(d)(1) specifies that a cement kiln not in operation prior to calendar year 2006 is subject to the source cap but must not be included in the source cap calculation in new §117.3123(b). New subsection (d)(2) specifies that the requirements of new §117.3142 and §117.3145 apply, and new subsection (d)(3) specifies that the NOX emissions from the kiln must be included in the calculation of the 30-day rolling average for compliance with the source cap. The intent of the source cap in new §117.3123 is to establish a maximum cap on the total NOX emissions from cement kilns at each account, based on the kilns in operation in calendar years 2003 through 2005. The provisions of new §117.3123(d) prohibit expanding the source cap based on new units installed after calendar year 2005. Also for subsections (c) and (d), rolling 30-day average is revised as 30-day rolling average to be consistent with the terminology used in the cap equation.

The rule adopts a new §117.3123(e) standard that requires the owner or operator to submit a control plan for compliance with the source cap. Control plans are required to be submitted to the Office of Compliance and Enforcement, the appropriate regional office, and the Chief Engineer's Office. Control plans submitted to the Chief Engineer's Office should be submitted to the attention of the Air Quality Planning Section. New §117.3123(e)(1) specifies the minimum content of the control plan, including: the emission point number for each kiln at the account; the facility identification number for each kiln at the account; the source cap for the account calculated according to the equation in new §117.3123(b); and a description of the control measures that have been or will be implemented for each cement kiln for compliance with the source cap. New §117.3123(e)(2) provides for revisions to the control plan and specifies that the revised control plan must be submitted with any required permit application. The revised control plan must adhere to the requirements of the rule. New §117.3123(f) specifies an ammonia emission specification of 10 ppmv at 7% O2 for units that inject ammonia or urea to control NOX emissions. Because SNCR and SCR are among the potential control technologies available for

compliance with the source cap, an ammonia emission specification is necessary to prevent excessive ammonia slip. In addition, rolling 24-hour average is revised as 24-hour rolling average to be consistent with other terminology in the section. Finally, new §117.3123(g) provides compliance flexibility by allowing owners or operators to comply with the source cap limitation, in whole or in part, using emission reduction credits as provided in new §117.9800.

- Please be advised that TCEQ has requested that 117.3123(f) not become a part of Texas SIP as ammonia is not a criteria pollutant, then 117.3123(f) will not be included in Texas SIP. The description of 117.3123(f) in the above narrative is merely for informational purposes.

- The adopted provision incorporates the source cap requirement for DFW area, utilizes the 30-day rolling averages in the source cap emissions calculation per equation 117.3123(b), results in 9.7 tons per day of additional NOx reductions, and includes languages consistent with the DFW ozone season for Ellis County, thus should be given approval.

Chapter IV

RACT

The EPA has defined RACT as the lowest emission limitation that a particular source can meet by applying a control technique that is reasonably available considering technological and economic feasibility. See 44 FR 53761, September 17, 1979. This requirement is established by sections 182(b)(2) and 182(f) of the Act. These two sections, taken together, establish the requirements for Texas to submit a NOx RACT regulation for cement kilns (a major source of NOx) in ozone nonattainment areas classified as moderate, such as the DFW, and above. A State may choose to develop its own RACT requirements on a case by case basis, considering the economic and technical circumstances of an individual source. In addition, section 183(c) of the Act provides that we will issue technical documents which identify alternative controls for stationary sources of NOx. The information in the ACT documents is generated from EPA papers, literature sources and contacts, control equipment vendors, engineering firms, and Federal, State, and local regulatory agencies. States can use information in the ACT to develop their RACT regulations. For a listing of EPA's ACT-related documents, including the ACT document for Cement Manufacturing, see http://www.epa.gov/ttn/naaqs/ozone/ctg_act/index.htm (URL dated April 22, 2008). As stated before, the cement kilns provisions 30 TAC Chapter 117 were last approved by EPA at 69 FR 15681 published on March 26, 2004 as meeting the 1-Hour ozone standard requirements. According to Table III of that document (69 FR 15681) the NOx emissions requirements were:

Source	County	NOx emission specification
Long wet kiln	Bexar, Comal, Hays, McLennan	6.0 lb NOx/ton of clinker produced
Long wet kiln	Ellis	4.0 lb NOx/ton of clinker produced
Long dry kiln	Bexar, Comal, Hays, McLennan, Ellis	5.1 lb NOx/ton clinker of produced
Preheater kiln	Bexar, Comal, Hays, McLennan, Ellis	3.8 lb NOx/ton of clinker produced
Precalciner or preheater-precalciner kiln	Bexar, Comal, Hays, McLennan, Ellis	2.8 lb NOx/ton of clinker produced

a) In section 3 of the 69 FR 15681, we stated that the NOx emissions specification listed in the above Table (Table III of the 69 FR 15681*) "meet and are in agreement with those found in our ACT Document, and are comparable to or more stringent than emission specifications for cement kilns in a number of other federally approved State rules."* In other words, the cement kilns provisions of Chapter 117 meet the NOx RACT requirements for Ellis County for the 1-Hour ozone standard purposes.

b) According to Table 2-1 below, Page 4 of the Final Report dated September 19, 2000, NO_x Control Technologies for the Cement Industry**,** EPA Contract No. 68-D98-026, Work Assignment No. 2-28, EC/R Project No. ISD-228, see (http://www.epa.gov/ttn/naaqs/ozone/ozonetech/cement_nox_update_09152000.pdf), the average

NOx emissions rates for different types cement kilns are as follows:

TABLE 2-1. SUMMARY OF UPDATED UNCONTROLLED NO_x EMISSIONS DATA AND THE CORRESPONDING 1994 ACT DOCUMENT ESTIMATES

	1994 ACT Document[1]		AP-42 [2]	Recent State Data[3]	
Cement kiln type	Average (lb/ton of clinker)	Range (lb/ton of clinker)	(lb/ton of clinker)	Average rate (lb/ton of clinker)	Range of rates (lb/ton of clinker)
Wet kiln	9.7	3.6 to 19.5	7.4	6.2	1.9 - 13.4
Long dry kiln	8.6	6.1 to 10.5	6.0	4.5	2.5 - 7.1
Preheater kiln	5.9	2.5 to 11.7	4.8	1.7	0.4 - 3.7
Precalciner kiln	3.8	0.9 to 7.0	4.2	2.9	1.1 - 5.6

c) Now, for the 8-Hour ozone standard purposes EPA is proposing to approve the following NOx emissions requirements for the affected Texas Counties:

NOx Control Requirements for Cement Kilns Under 8-Hour Ozone SIP for Texas

Source	County	NOx emission Requirement	Citation
Long wet kiln	Bexar, Comal, Hays, McLennan	6.0 lb NOx/ton of clinker produced	117.3110(a)(1)(A)
Long dry kiln	Bexar, Comal, Hays, McLennan	5.1 lb NOx/ton clinker of produced.	117. 3110(a)(2)
Preheater kiln	Bexar, Comal, Hays, McLennan	3.8 lb NOx/ton of clinker produced.	117. 3110(a)(3)
Precalciner or preheater-precalciner kiln	Bexar, Comal, Hays, McLennan	2.8 lb NOx/ton of clinker produced.	117. 3110(a)(4)
Long wet kiln	Ellis	4.0 lb NOx/ton of clinker produced, outside DFW ozone season.	117. 3110(a)(1)(B)
Preheater kiln	Ellis	3.8 lb NOx/ton of clinker produced, outside DFW ozone season.	117. 3110(a)(3)
Long dry kiln	Ellis	5.1 lb NOx/ton clinker of produced, outside DFW ozone season.	117. 3110(a)(2)
Precalciner or preheater-precalciner kiln	Ellis	2.8 lb NOx/ton of clinker produced, outside DFW ozone season.	117. 3110(a)(4)

Portland cement kiln	Ellis	During DFW ozone season, 30-day rolling average, source cap equation 117.3123(b), with 2003-2005 reported average annual clinker production, limit is equivalent to 1.7 lb NOx/ton of clinker produced for dry preheater-precalciner or precalciner kilns, or 3.4 lb NOx/ton of clinker produced for long wet kilns.	117.3123(b)

A) A comparison of the NOx emission requirements listed in paragraph "c" versus paragraph "b" reveals that the NOx emissions requirements we are proposing for approval, for Ellis County, in paragraph "c" are more stringent than those of AP-42.

B) A comparison of the NOx emission requirements listed in paragraph "c" versus "b" reveals that the NOx emissions requirements we are proposing for approval, for Ellis County, in paragraph "c" are more stringent than those presented in Table 2-1 of our ACT document for the 1-Hour ozone standard purposes.

C) A comparison of the NOx emission requirements listed in paragraph "c" versus "a" reveals that the NOx emissions requirements we are proposing for approval, for Ellis County, in paragraph "c" are more stringent than those we approved as RACT under the 1-Hour ozone standard rulemaking action in March 26, 2004.

D) The NOx emissions requirements we are proposing for approval will results in 9.7 tons per day of additional NOx reductions, and will assist the DFW 8-hour ozone nonattainment area to reach attainment.

- The Mojave Desert Air Quality Management District, Rule 1161, concerning Portland Cement Kilns was adopted on June 28, 1995. The final notice for limited approval of Rule 1161 was published on May 11, 2000, 65 FR 30355. A summary of NOx RACT rule for cement kilns' emission specifications is listed in the following table:

Table A:

Area	Source Type	Emission Specification
Mojave Desert AQMD	long dry kilns	6.4 lb NOx/ton of clinker produced
Mojave Desert AQMD	preheater-precalciner kilns	6.4 lb NOx/ton of clinker produced

See section 1161(C)(2) of the Mojave Desert AQMD air regulations at: http://www.arb.ca.gov/drdb/moj/cur.htm (URL dating May 1, 2008).

Section (C)(1) lists the followings as the RACT for cement kilns:
(i) Combustion Controls

(ii) Low NO_x burners
(iii) Staged combustion
(iv) NO_x-reducing fuels or substances (includes tire-derived fuels).

- On July 2, 2001 (66 FR 34864) EPA published NOx regulations for the State of Indiana. Table 8-Low NOx Burner Cement Kiln Stringency has the following 30-day emission limits (see 326 IAC 10-1):

Table B:

Area	Source Type	Emission Specification
Indiana	long dry kilns	6.0 lb NOx/ton of clinker produced
Indiana	preheater kilns	4.4 lb NOx/ton of clinker produced

The Indiana air regulations (326 IAC 10-1-4) can be found at: http://www.IN.gov/legislative/iac/title326.html (URL dating April 30, 2008).

- On November 19, 2002 (67 FR 69688) EPA published NOx regulations for Kentucky. The Kentucky regulations on NOx emissions from cement kilns set forth the following limits, on a 30-day rolling average, on and after May 31, 2004 (401 KAR 51:170):

Table C:

Area	Source Type	Emission Specification
Kentucky	long dry kilns	6.6 lb NOx/ton of clinker produced
Kentucky	long wet kilns	6.6 lb NOx/ton of clinker produced
Kentucky	preheater kiln	6.6 lb NOx/ton of clinker produced
Kentucky	precalciner or preheater/precalciner	6.6 lb NOx/ton of clinker produced

The Kentucky air regulations can be found at: http://www.lrc.state.ky.us/kar/TITLE401.HTM (URL dating May 1, 2008).
Look for Chapter 51 titled "Attainment and Maintenance of the National Ambient Air Quality Standards."

- Section 217.402(a) of the Illinois regulations on NOx emissions from cement kilns titled Control Requirements states:

"After May 30, 2004, an owner or operator of any cement kiln subject to the requirements of this Subpart shall not operate the kiln during the initial control period or any subsequent control

period, unless the owner or operator complies with subsection (a)(1), (a)(2), (a)(3), (a)(5) or (a)(6) of this Section for kilns that commenced operation prior to January 1, 1996, or subsection (a)(4) or (a)(6) of this Section for kilns that commenced operation on or after January 1, 1996.

1) The kiln is operated with a low-NO_x burner or a mid-kiln firing system;

2) The kiln shall not exceed the applicable NO_x emission limitation in pounds per ton of clinker (lb/T), expressed in the rates listed below:

A) Long dry kilns -- 5.1 lb NO_x/T of clinker;
B) Long wet kilns -- 6.0 lb NO_x/T of clinker;
C) Preheater kilns -- 3.8 lb NO_x/T of clinker; or
D) Preheater/precalciner kilns -- 2.8 lb NO_x/T of clinker.

3) The kiln achieves a 30 percent or greater reduction from its uncontrolled baseline, established as set forth subsection (a)(3), and complies with the following:"

Section 217.402(a)(2) of the Illinois regulations is tabulated in Table D below.

Table D: Illinois regulations on NOx emissions from cement kilns

Area	Source Type	Emission Specification
Illinois	Long dry kilns	5.1 lb NOx/ton of clinker produced
Illinois	Long wet kilns	6.0 lb NOx/ton of clinker produced
Illinois	Preheater kilns	3.8 lb NOx/ton of clinker produced
Illinois	Preheater/precalciner kilns	2.8 lb NOx/ton of clinker produced

The Illinois air regulations on NOx from cement kilns (Subpart T) can be found at:
http://www.ipcb.state.il.us/documents/dsweb/Get/Document-11927/
Also see EPA's final approval of Illinois' NOx regulations on November 8, 2001 (66 FR 56449-56454).

- On August 9, 2001 (66 FR 41793) EPA approved the NOx emissions limits from cement kilns for 2 individual facilities in the Pittsburgh-Beaver Valley Area, Pennsylvania.

Table F:

Area	Source Type	Emission Specification
Pennsylvania	Kosmos Cement Company - Wet Kiln	8.0 lb NOx/ton of clinker produced

Pennsylvania	Armstrong Cement and Supply Company - Wet Kiln	6.62 lb NOx/ton of clinker produced

- On November 24, 2003 (68 FR 65846) EPA approved the NOx RACT determinations for the Hercules Cement Company, Northampton County, Pennsylvania, into the Commonwealth of Pennsylvania's SIP. The latest active Operating Permit issued to this facility is 48-0005A.

- Table 2 of the RACT SIP revision for the Pennsylvania Department of Environmental Protection under the 8-Hour Ozone NAAQS (September 2006) states RACT for cement kilns is considered met when 30% reduction in NOx, upon installation and operation of controls, from uncontrolled levels. You can find this document at http://www.dep.state.pa.us/dep/deputate/airwaste/aq/plans/plans/general/RACTSIPFinal.pdf (URL dating May 1, 2008). Also at http://www.dep.state.pa.us/dep/deputate/airwaste/aq/plans/clean_air_plans.htm#ozone

- Table 2 of the (Philadelphia NOx RACT List and Certification under the 8-Hour Ozone NAAQS) NOx RACT SIP revision for the Philadelphia County states that RACT for cement kilns is considered met when 30% reduction in NOx, upon installation and operation of controls, from uncontrolled levels. You can find this document at: http://www.dep.state.pa.us/dep/deputate/airwaste/aq/plans/plans/philly/RACT_Phila_Final.pdf (URL dating May 1, 2008). Also at http://www.dep.state.pa.us/dep/deputate/airwaste/aq/plans/clean_air_plans.htm#ozone

- On January 16, 2003 (68 FR 2211-2217) EPA approved the NOx regulations for the portland cement kilns, among other things, operating in the State of Ohio. The Ohio Administrative Code (OAC) 3745-14-11 can be found at http://www.epa.state.oh.us/dapc/regs/3745-14/3745-14-11.pdf (URL dating May 1, 2008).

The OAC Section 3745-14-11-B states that:

"(B) After April 30, 2004, an owner or operator of any portland cement kiln subject to this rule shall not operate the kiln during May first through September thirtieth unless the kiln has installed and operates during May first through September thirtieth with low-NOx burners, mid-kiln system firing, or alternative control techniques, subject to approval by the administrator, that achieve at least the same emissions decreases as low-NOx burners or mid-kiln system firing."

A comparison of paragraphs identified as "A" through "D," and the NOx control requirements identified above by a single bullet symbol in the RACT part of this TSD reveals that:

1) the current EPA-approved cement kilns related provisions of 30 TAC Chapter 117 are in agreement or more stringent than those of the provisions identified above.
2) the cement kilns provisions of the June 15, 2007 submittal meet the RACT requirements for NOx emissions from cement kilns operating in the DFW 8-hour ozone nonattainment area, and by proposing to approve the cement kilns provisions of the June 15, 2007 submittal we are stating that Texas is meeting the NOx RACT requirements for cement kilns in the DFW area.

Section 117.3125, Alternative Case Specific Specifications

New §117.3125 sets forth provisions for alternative case specific emission specifications for ammonia. Section 117.3125(a) specifies that the executive director may approve emission specifications different from the ammonia specification for a unit where a person can demonstrate that the affected unit cannot attain the ammonia specification of §117.3123(f). Subsection (a)(1) specifies that the executive director shall consider, on a case-by-case basis, the technological and economic circumstances of the individual unit. Subsection (a)(2) requires that the executive director must determine that such specifications are the result of the lowest emission specification the unit is capable of meeting after the application of controls to meet the NOX emission specifications of §117.3123. Subsection (a)(3) specifies that the executive director, in determining whether to approve alternative emission specifications, may take into consideration the ability of the plant at which the unit is located to meet emission specifications through system-wide averaging at maximum capacity. Finally, §117.3125(b) specifies that any owner or operator affected by the executive director's decision to deny an alternative case specific emission specification may file a motion to overturn the executive director's decision and that the requirements of §50.139 apply to §117.3125.

- Please be advised that per TCEQ's request 117.3125 will not become a part of Texas SIP, thus this section will not be included in Texas SIP. The above description of changes has been included here merely for informational purposes.

Section 117.3140, Continuous Demonstration of Compliance

New §117.3140 incorporates the rule language from existing §117.243, concerning continuous demonstration of compliance. New §117.3140(a) – (c) incorporate the rule language from existing §117.273(a) – (c), respectively. In addition, for new §117.3140(c)(2), the cross-reference to existing §117.213(f)(2) – (7) is changed to new §117.8100(b) because the applicable requirements for PEMS in existing §117.213(f)(2) – (7) are incorporated in new §117.8100(b).

- The adopted provision is consistent with the EPA approved Texas SIP of sections 117.243, 117.273, and 117.213, provides for NOx control enforcement, thus should be given approval.

Section 117.3142, Emission Testing and Monitoring for Eight-Hour Attainment Demonstration

New §117.3142 specifies emission testing and monitoring requirements for units subject to the source cap in new §117.3123. New §117.3142(a) specifies that the owner or operator of any portland cement kiln subject to new §117.3123 must comply with the monitoring requirements in new §117.3142(a)(1) – (4). New §117.3142(a)(1) specifies that the NOX monitoring requirements of §117.3140 apply. The affected facilities are already required to monitor NOX emissions under either existing §117.473, which is incorporated in the new §117.3140, or due to TCEQ air permit requirements. In addition, new §117.3142(a)(1)(A) – (C) specify additional requirements for NOX CEMS. New subparagraph (A) requires that each individual stack must be analyzed for NOX separately for single units with multiple exhaust stacks. New subparagraph (B) allows sharing of CEMS among units or among multiple exhaust stacks on a single unit provided the conditions of subparagraph (B)(i) and (ii) are met. New §117.3142(a)(1)(B)(i) requires that exhaust of each stack is analyzed and reported separately, and new §117.3142(a)(1)(B)(ii) requires that the CEMS meet the certification requirements in §117.3140(b) for each exhaust stream while the CEMS is operating in time-shared mode. New §117.3142(a)(1)(C) requires that all bypass stacks be monitored to quantify emissions directed through the bypass stack. If the CEMS is located upstream of the bypass stack to satisfy this requirement, the new clauses (i) and (ii) specify additional requirements for monitoring of bypass stacks. New clause (i) specifies that no stream from other potential sources of NOX may be introduced between the CEMS and the bypass stack. New clause (ii) requires the owner or operator to install, operate, and maintain a continuous monitoring system to record automatically the date, time, and duration of each event when the bypass stack is open. These additional requirements for CEMS are necessary to ensure that NOX emissions are accurately quantified for compliance with the source cap in new §117.3123. The new §117.3142(a)(2) to require monitoring of stack exhaust flow rate using the monitoring specifications of 40 CFR Part 60, Appendix B, Performance Specification 6, or 40 CFR Part 75, Appendix A. This new flow monitoring requirement is necessary to ensure that total NOX emissions are accurately quantified for compliance with the new source cap in new §117.3123. The affected facilities in Ellis County are already required to perform similar flow monitoring due to the TCEQ air permit requirements. Therefore, this new flow monitoring requirement should not require the installation of any new monitoring equipment. In addition, the certification requirements in new §117.3142(a)(2) are similar to the flow monitor certification requirements already required for the monitoring systems by permit.

For units that inject ammonia or urea to control NOX emissions, new §117.3142(a)(3) requires that ammonia emissions must be monitored according to either new §117.8130(1), (2), or (4). These ammonia monitoring procedures include the mass balance approach, the oxidation of ammonia to nitric oxide approach, or other methods approved by the executive director. The method of stain tubes method in §117.8130(3) is not appropriate for cement kilns in determining compliance with the ammonia emission specification in §117.3123(f) due to the infrequency of sample collection using this method and the potential high variability of ammonia emissions from kilns using urea or ammonia injection for NOX control. Based on comments received, the revised the adopted §117.3142(a)(3) to clarify that ammonia monitoring is required for kilns that inject ammonia or urea for NOX control regardless of fuel type. In addition, for the adopted §117.3142(a)(3), the added language that specifies the ammonia monitoring requirements only apply from March 1 to October 31, or any other time the owner or operator injects ammonia or

urea for NOX control. This change is necessary because the source cap under §117.3123 only applies during ozone season, when the sources are mostly likely to be using NOX control technologies that use ammonia or urea injection.
New §117.3142(a)(4) specifies that the installation of monitors must be performed in accordance with the schedule specified in §117.9320(c).
The new §117.3142(b) that specifies the calculations and equations used to demonstrate compliance with the source cap. As discussed elsewhere in this preamble, the source cap under §117.3123 only applies from March 1 to October 31. Therefore, the adopted §117.3142(b) to specify that the calculation requirements of subsection (b) only apply during that time frame so owners or operators are not required to perform the calculations specifically associated with the source cap when the cap does not apply. New §117.3142(b)(1) specifies the equation used to calculate hourly NOX emissions from each kiln, in pounds per hour, identified as resultant "EH" in the equation. Variable "C" is the block hour average NOX concentration in ppmv, dry basis. Variable "F" is the block hour average exhaust flow rate in dry standard cubic feet per minute. Based on comments received, the commission has removed the requirement that variables "C" and "F" must be on a 7% oxygen corrected basis. Variable "K" is a conversion factor from 40 CFR 60, Appendix A, Method 19 for calculating NOX mass emission rates from ppmv concentrations. New §117.3142(b)(2) specifies the equation for calculating the total daily NOX emissions, expressed as resultant "ED" in the equations, in tons per day from the hourly emissions determined according to new subsection (b)(1) and the number of hours of operation per day for each kiln, expressed as variable "N" in the equation. New §117.3142(b)(3) specifies the equation for determining the 30-day rolling average NOX emissions, expressed as resultant "E30day" in the equation, in tons per day for the account, computed for the preceding 30 days. The 30-day rolling average is calculated based on the total daily NOX emissions from each kiln determined according to new subsection (b)(2), the number of kilns located at the account, expressed as variable "K," and the preceding 30 days, expressed as variable "N" in the equation. The term rolling 30-day average in the proposed subsection (b)(3) was revised as 30-day rolling average for the adopted rule to be consistent with the cap equation in §117.3123.

- The adopted provision provides for monitoring, and enforcement of the NOx control requirements, utilizes 40 CFR 60 Appendix A Test Method 19 for NOx testing, requires monitoring specifications of 40 CFR Part 60, Appendix B, Performance Specification 6, or 40 CFR Part 75, Appendix A for quality assurance purposes, adopts the 30-day rolling average that is consistent with other cement kiln rule approved by EPA for Texas, thus should be given approval.

Section §117.3145, Notification, Recordkeeping, and Reporting Requirements

New §117.3145 incorporates the rule language from existing §117.279, concerning notification, recordkeeping, and reporting requirements. New §117.3145(a) – (c) incorporates the notification, recordkeeping, and reporting rule language from existing §117.279(a) – (c). In addition, modifications to the existing rule language and additional requirements are for the sources subject to the new source cap in §117.3123. For new §117.3145(a), concerning notification, the reference to new §117.3142 to the existing language from §117.279. This change is necessary to require notification of any CEMS or PEMS performance evaluation for

monitoring systems required under §117.3142. Similarly, the added reference to new §117.3142 in new §117.3145(b) to require reporting of test results for any CEMS or PEMS relative accuracy test audit. New §117.3145(c)(1) is revised to specify that for each kiln subject to §117.3110 or §117.3120, the records in subparagraphs (A) - (C) are required. This change is necessary to clarify that sources subject to the source cap in §117.3123 are not required to maintain the records under §117.3145(c)(1)(A) – (C). In addition, for new §117.3145(c)(1)(B), the language from existing §117.279(c)(1)(B) has been revised to specify that records of the production of clinker should be in United States short tons. Metric tons are typically used by the cement manufacturing industry to express production and this change is necessary to clarify the appropriate units for the records and for the emissions calculated in pounds per ton of clinker. New §117.3145(c)(4) specifies new recordkeeping requirements for each kiln subject to the source cap in new §117.3123 and the monitoring requirements of new §117.3142. New §117.3145(c)(4)(A) requires records of the control plan required by new §117.3123. New §117.3145(c)(4)(B) and (C) require hourly records of the average NOX concentration in ppmv, and hourly records of the NOX emission in pounds per hour. The requirement to correct NOX concentrations to 7% oxygen has been removed based on comments received. New §117.3145(c)(4)(D) and (E) require daily records of the NOX emissions from each kiln in tons per day and daily records of the NOX emissions in tons per day expressed as 30-day rolling average. As discussed elsewhere in this preamble, rolling 30-day average was revised to be consistent with §117.3123. New §117.3145(c)(4)(F) requires hourly records of the average exhaust gas flow rate in dry standard cubic feet per minute. The requirement to correct flow rate to 7% oxygen has been removed based on comments received. New §117.3145(c)(4)(G) requires records of the ammonia monitoring required under new §117.3142(a)(3).

- The adopted provision is consistent with the EPA approved Texas SIP of 117.279, requires reporting of test results for any CEMS or PEMS relative accuracy test audit, requires hourly records of the average exhaust gas flow rate, requires recording and reporting of clinker production in proper units, facilitates NOx control enforcement, thus should be given approval.

Section §117.9320 Compliance Schedule for Cement Kilns

New §117.9320 incorporates the rule language regarding the compliance schedule for cement kilns from existing §117.524. New §117.9320(a) and (b) incorporate the rule language from existing §117.524(a) and (b), respectively. In addition, for new §117.9320(a), the commission adds the language "Except as specified in subsection (c) of this section . . .." This change is necessary to clarify that the compliance schedule in subsection (a) is not applicable to the new requirements in §§117.3123, 117.3142, and 117.3145. A new §117.9320(c) specifies that the owner or operator of each portland cement kiln in Ellis County must be in compliance with the requirements of §117.3123 and §117.3142, and the applicable requirements of §117.3145 as soon as practicable, but no later than March 1, 2009. In addition, new §117.9320(c)(1) specifies that the provisions in new §117.9320(b), regarding extension of compliance schedules, do not apply to subsection (c) or the requirements of §117.3123, §117.3142, or the applicable requirements of §117.3145. New §117.9320(c) is necessary to ensure that the required reductions under the source cap of §117.3123 occur by the date necessary to demonstrate attainment. However, based

on comments received, the commission has revised §117.9320(c) to include a provision in new paragraph (2) that would extend the compliance date to no later than March 1, 2010, if a contested case hearing is granted as a direct result of a permit application necessary to comply with §117.3123. New §117.9320(c)(2) also specifies that the compliance date remains March 1, 2009, if a contested case hearing is granted under the conditions specified in subparagraphs (A) or (B). The condition in new subparagraph (A) is if the contested case hearing is granted as a result of a permit application that includes modifications necessary to comply with §117.3123, but the contested case hearing is the result of modifications included in the permit that are unrelated to compliance with §117.3123. The condition in new subparagraph (B) is if the contested case hearing is granted at the request of the owner or operator of the affected portland cement kiln or a third party affiliated with the owner or operators. The provisions of subparagraph (A) or (B) are necessary to ensure that the compliance date is only extended to March 1, 2010, if a contested case hearing is granted due to circumstances beyond the control of the affected site.

Under the 1-Hour ozone SIP in Table V of 69 FR 15681, published on March 26, 2004 we approved the following NOx compliance schedule for the cement kilns in Texas.

Source	Compliance schedule
Cement kilns in Ellis County	May 1, 2003
Cement kilns in Bexar, Comal, Hays, and McLennan	May 1, 2005

Under the 8-Hour ozone SIP the compliance schedule for the cement kilns in Bexar, Comal, Hays, and McLennan remains the same as that in the above Table (per section 117.524), and the compliance schedule for cement kilns in Ellis County will be as follows:

Source	**Compliance Date**	**Additional Information**	**Citation**
Cement Kilns	Comply with testing, monitoring, notification, recordkeeping, and reporting requirements for Ellis County as soon as practicable but no later than March 1, 2009.	8-hour attainment demonstration requirement	117.9320

- The adopted provision incorporates language from EPA approved Texas SIP of 117.524, allows for a practicable time to install additional NOx control equipment on kilns located in Ellis County, thus should be given approval.

Chapter V

Text of Sections Proposed for Approval by EPA

Based on the above-described changes the resulting rule language for the 2006-117-EN : the Dallas/Fort Worth Cement Kiln Rule will become as follows:

§117.3100. Applicability.

This division (relating to Cement Kilns) applies to each portland cement kiln in Bexar, Comal, Ellis, Hays, and McLennan Counties.

§117.3101. Cement Kiln Definitions.

Unless specifically defined in the Texas Clean Air Act (TCAA) or in the rules of the commission, the terms used by the commission have the meanings commonly used in the field of air pollution control. In addition to the terms that are defined by the TCAA, the following terms, when used in this division (relating to Cement Kilns), have the following meanings, unless the context clearly indicates otherwise. Additional definitions for terms used in this division are found in §§3.2, 101.1, and 117.10 of this title (relating to Definitions).

(1) **Clinker**--The product of a portland cement kiln from which finished cement is manufactured by milling and grinding.

(2) **Indirect-firing system**--A system that reduces the amount of primary air used in a cement kiln by:

(A) separating the powdered fuel from the air stream that carries the fuel from the drying/milling equipment;

(B) storing the fuel briefly; and

(C) using an independent, significantly smaller stream of hot primary air to blow the fuel to the burner.

(3) **Long dry kiln**--A kiln that employs no preheating of the dry feed. The inlet feed to the kiln is dry.

(4) **Long wet kiln**--A kiln that employs no preheating of the dry feed. The inlet feed to the kiln is a slurry.

(5) **Low-NOX burner**--Either of the following:

(A) for long wet kilns, combustion equipment designed to reduce flame turbulence, delay fuel/air mixing, and establish fuel-rich zones for initial combustion; or Texas Commission on Environmental Quality Page 15 Chapter 117 - Control of Air Pollution from Nitrogen Compounds

(B) a type of cement kiln burner that results in decreasing nitrogen oxides emissions and that has an indirect-firing system and a series of channels or orifices that:

(i) allow for the adjustment of the volume, velocity, pressure, and direction of the air carrying the fuel (known as primary air) and the combustion air (known as secondary air) into the kiln; and

(ii) impart high momentum and turbulence to the fuel stream to facilitate mixing of the fuel and secondary air.

(6) **Low-NOX precalciner**--A process in which a portion of the fuel is injected near the raw material feed end of a preheater or precalciner kiln, resulting in a reducing atmosphere in the preheater or precalciner.

(7) **Mid-kiln firing**--Secondary combustion in long dry or long wet kilns by injecting solid fuel at (or to) an intermediate point in the kiln using a specially-designed feed injection mechanism for the purpose of decreasing nitrogen oxides emissions through:

(A) burning part of the fuel at a lower temperature; and

(B) reducing conditions at the solid fuel injection point that may destroy some of the nitrogen oxides formed upstream in the kiln burning zone.

(8) **Portland cement**--A hydraulic cement produced by pulverizing clinker consisting essentially of hydraulic calcium silicates, usually containing one or more of the forms of calcium sulfate as an interground addition.

(9) **Portland cement kiln**--A system, including any solid, gaseous, or liquid fuel combustion equipment, used to calcine and fuse raw materials, including limestone and clay, to produce portland cement clinker.

(10) **Precalciner kiln**--A kiln where the feed to the kiln system is preheated in cyclone chambers and utilizes a second burner to calcine material in a separate vessel attached to the preheater before the final fusion in a kiln that forms clinker.

(11) **Preheater kiln**--A kiln where the feed to the kiln system is preheated in cyclone chambers before the final fusion in a kiln that forms clinker.

(12) **Secondary combustion**--A system that employs a second combustion point in addition to the primary flame. This definition includes mid-kiln firing in long dry and long wet kilns, and also additional combustion at the raw material feed end of the kiln in preheater-precalciner kilns.

§117.3103. Exemptions.

(a) Portland cement kilns exempted from the provisions of this division (relating to Cement Kilns), include any portland cement kiln placed into service on or after December 31, 1999, except as specified in §§117.3110, 117.3120, and 117.3123 of this title (relating to Emission Specifications; Source Cap; and Dallas-Fort Worth Eight-Hour Ozone Attainment Demonstration Control Requirements).

(b) Any account in Ellis County with no portland cement kilns in operation prior to January 1, 2001, is exempt from §117.3123 of this title.

(c) After the compliance date specified in §117.9320(c) of this title (relating to Compliance Schedule for Cement Kilns), portland cement kilns that are subject to §117.3123 of this title are exempt from §117.3110 and §117.3120 of this title between March 1 and October 31 of each calendar year.

§117.3110. Emission Specifications.

(a) In accordance with the compliance schedule in §117.9320 of this title (relating to Compliance Schedule for Cement Kilns), the owner or operator of each portland cement kiln shall

ensure that nitrogen oxides (NOX) emissions do not exceed the following rates on a 30-day rolling average. For the purposes of this section, the 30-day rolling average is calculated as the total of all the hourly emissions data (in pounds) that fuel was combusted in a cement kiln in the preceding 30 consecutive days, divided by the total number of tons of clinker produced in that kiln during the same 30-day period:

(1) for each long wet kiln:

(A) in Bexar, Comal, Hays, and McLennan Counties, 6.0 pounds per ton (lb/ton) of clinker produced; and

(B) in Ellis County, 4.0 lb/ton of clinker produced;

(2) for each long dry kiln, 5.1 lb/ton of clinker produced;

(3) for each preheater kiln, 3.8 lb/ton of clinker produced; and

(4) for each preheater-precalciner or precalciner kiln, 2.8 lb/ton of clinker produced.

(b) If there are multiple cement kilns at the same account, the owner or operator may choose to comply with the emission specifications of subsection (a) of this section on the basis of a weighted average for the cement kilns at the account that are subject to the same specification. Each owner or operator choosing this option shall submit written notification of this choice to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction before the appropriate compliance date in §117.9320 of this title.

(c) Each long wet or long dry kiln for which the following controls are installed and operated during kiln operation is not required to meet the NOX emission specifications of subsection (a) of this section, provided that each owner or operator choosing this option submits written notification of this choice to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction before the appropriate compliance date in §117.9320 of this title:

(1) a low-NOX burner and either:

(A) mid-kiln firing; or

(B) some other form of secondary combustion achieving equivalent levels of NOX reductions; or alternatively;

(2) other additions or changes to the kiln system achieving at least a 30% reduction in NOX emissions, provided the additions or changes are approved by the executive director with concurrence from the United States Environmental Protection Agency.

(d) Each preheater or precalciner kiln for which either a low-NOX burner or a low-NOX precalciner is installed and operated during kiln operation is not required to meet the NOX emission specifications of subsection (a) of this section. Each owner or operator choosing this option shall submit written notification of this choice to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction before the appropriate compliance date in §117.9320 of this title.

(e) An owner or operator may use §117.9800 of this title (relating to Use of Emission Credits for Compliance) to meet the NOX emission control requirements of this section, in whole or in part.

§117.3120. Source Cap.

(a) As an alternative to complying with the requirements of §117.3110 of this title (relating to Emission Specifications) in Bexar, Comal, Ellis, Hays, and McLennan Counties, an owner or operator may reduce total nitrogen oxides (NOX) emissions (in pounds per day (ppd)) from all cement kilns at the account (including any cement kilns placed into service on or after December 31, 1999) to at least 30% less than the total NOX emissions (in ppd) from all cement kilns in the account's 1996 emissions inventory (EI), on a 90-day rolling average basis. For the purposes of this section, the 90-day rolling average is calculated as the total of all the hourly emissions data for the preceding 90 days. For the calendar year that includes the appropriate compliance date in §117.9320 of this title (relating to Compliance Schedule for Cement Kilns), only hourly emissions data on or after that compliance date is included, such that the first 90-day period ends 90 days after the appropriate compliance date in §117.9320 of this title. A 90-day rolling average emission cap must be calculated using the following equation.

$$Cap = 0.7 \quad R_i$$

Where: i = 1 to N ;

Cap = 90-day rolling average NOX emission cap, in ppd;

i = each cement kiln at a single account;

N = the total number of cement kilns at the account; and

Ri = the kiln’s ozone season daily NOX emission rate (in ppd) reported in the account's 1996 EI.

(b) To qualify for the source cap option available under this section, the owner or operator shall submit an initial control plan to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction that demonstrates that the overall reduction of NOX emissions from all cement kilns at the account will be at least 30% from the 1996 baseline EI on a 90-day rolling average basis. The plan must be submitted no later than December 31 of the year preceding the appropriate compliance date in §117.9320 of this title. Each control plan must be approved by the executive director before the owner or operator may use the source cap available under this section for compliance. At a minimum, the control plan must include the emission point number (EPN), facility identification number (FIN), and 1996 baseline EI NOX emissions (in ppd) from each cement kiln at the account; a description of the control measures that have been or will be implemented at each cement kiln; and an explanation of the recordkeeping procedure and calculations that will be used to demonstrate compliance.

(c) Beginning on March 31 of the year following the appropriate compliance date in §117.9320 of this title, the owner or operator shall submit an annual report no later than March 31 of each year to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction that demonstrates that the overall reduction of NOX emissions from all cement kilns at the account is at least 30% from the 1996 baseline EI on a 90-day rolling average basis. At a minimum, the report must include the EPN, FIN, and each 90-day rolling average NOX emissions (in ppd) during the preceding calendar year for the cement kilns at the account.

(d) All representations in control plans and annual reports become enforceable conditions. The owner or operator shall not vary from such representations if the variation will cause a change in the identity of the specific cement kilns subject to this section or the method of control

of emissions unless the owner or operator submits a revised control plan to the executive director, the appropriate regional office, and any local air pollution control program with jurisdiction no later than 30 days after the change. All control plans and reports must demonstrate that the total NOX emissions (in ppd) from all cement kilns at the account (including any cement kilns placed into service on or after December 31, 1999) are being reduced to at least 30% less than the total NOX emissions (in ppd) from all cement kilns in the account's 1996 EI on a 90-day rolling average basis.

(e) The NOX emissions monitoring required by §117.3140 of this title (relating to Continuous Demonstration of Compliance) for each cement kiln in the source cap must be used to demonstrate continuous compliance with the source cap.

(f) An owner or operator may use §117.9800 of this title (relating to Use of Emission Credits for Compliance) to meet the NOX emission control requirements of this section, in whole or in part.

§117.3123. Dallas-Fort Worth Eight-Hour Ozone Attainment Demonstration Control Requirements.

(a) In accordance with the compliance schedule in §117.9320(c) of this title (relating to Compliance Schedule for Cement Kilns), the owner or operator of any portland cement kiln located in Ellis County shall not allow the total nitrogen oxides (NOX) emissions from all cement kilns located at the account to exceed the source cap limitation determined according to subsection (b) of this section. The source cap limitation of this section only applies from March 1 through October 31 of each calendar year. Compliance with the 30-day rolling average cap must be demonstrated beginning on March 31 of each calendar year.

(b) The NOX source cap for an account subject to this section must be calculated according to the following equation.

$$Cap_{8hour} = [(N_W \times K_w) + (N_D \times K_D)] / [(2000 \text{ lb/ton} \times 365 \text{ day/year})]$$

Where:

Cap_{8hour} = total allowable NOX emissions from all cement kilns located at an account, tons per day, 30-day rolling average basis;

KD = 1.7 pounds NOX per ton of clinker for dry preheater-precalciner or precalciner kilns;

KW = 3.4 pounds NOX per ton of clinker for long wet kilns;

ND = the average annual production in tons of clinker plus one standard deviation for the calendar years 2003, 2004, and 2005, as reported to the commission's Industrial Emissions Assessment Section, from all dry preheater-precalciner or precalciner kilns located at the account; and

NW = the average annual production in tons of clinker plus one standard deviation for the calendar years 2003, 2004, and 2005, as reported to the commission's

Industrial Emissions Assessment Section, from all long wet kilns located at the account.

(c) The monitoring required by §117.3142 of this title (relating to Emission Testing and Monitoring for Eight-Hour Attainment Demonstration) for each cement kiln subject to this section must be used to demonstrate continuous compliance with the source cap requirements of this section. Compliance with the source cap must be demonstrated on a 30-day rolling average basis, calculated according to §117.3142 of this title.

(d) For any portland cement kiln not operational prior to calendar year 2006 and that is located at an account subject to this section, the following requirements apply.

(1) The cement kiln is subject to the source cap of this section but must not be included in the source cap calculation in subsection (b) of this section.

(2) The requirements of §117.3142 of this title and §117.3145 of this title (relating to Notification, Recordkeeping, and Reporting Requirements) apply.

(3) The NOX emissions from the kiln must be included in the calculation of 30-day rolling average NOX emissions according to §117.3142 of this title for compliance with the source cap in subsection (b) of this section.

(e) The owner or operator of each portland cement kiln located in Ellis County shall submit a control plan to the Office of Compliance and Enforcement, the appropriate regional office, and the Chief Engineer's Office, for compliance with the source cap in subsection (b) of this section. The plan must be submitted according to the compliance schedule in §117.9320(c) of this title.

(1) At a minimum, the control plan must include:

(A) the emission point number for each kiln at the account;

(B) the facility identification number for each kiln at the account;

(C) the source cap for the account calculated according to the equation in subsection (b) of this section; and

(D) a description of the control measures that have been or will be implemented for each cement kiln for compliance with the source cap.

(2) A revised control plan may be submitted by the owner or operator, along with any required permit applications. Such a plan must adhere to the requirements of this division (relating to Cement Kilns).

(f) For any kiln that injects urea or ammonia for NOX control, the owner or operator shall not allow ammonia emissions in excess of 10 parts per million by volume at 7.0% oxygen, dry basis, on a 24hour rolling average basis. *[117.3123(f) not a part of SIP]*

(g) An owner or operator may use §117.9800 of this title (relating to Use of Emission Credits for Compliance) to meet the NOX emission control requirements of this section, in whole or in part.

§117.3125. Alternative Case Specific Specifications. *[not a part of SIP]*

§117.3140. Continuous Demonstration of Compliance.

(a) Nitrogen oxides (NOX) monitors. In accordance with the compliance schedule in §117.9320 of this title (relating to Compliance Schedule for Cement Kilns), the owner or operator

shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) or predictive emissions monitoring system (PEMS) to monitor kiln exhaust NOX.

(b) CEMS requirements. The owner or operator of any CEMS used to meet the monitoring requirement of subsection (a) of this section shall comply with the following.

(1) The CEMS must meet the requirements of 40 Code of Federal Regulations Part 60 as follows:

(A) §60.13;

(B) Appendix B, Performance Specification 2, for NOX; and

(C) audits in accordance with Section 5.1 of Appendix F, quality assurance procedures, except that a cylinder gas audit or relative accuracy audit may be performed in lieu of the annual relative accuracy test audit (RATA) required in Section 5.1.1.

(2) One CEMS may be shared among kilns, provided:

(A) the exhaust stream of each kiln is analyzed separately; and

(B) the CEMS meets the certification requirements of paragraph (1) of this subsection for each exhaust stream.

(3) The CEMS is subject to the approval of the executive director.

(c) PEMS requirements. The owner or operator of any PEMS used to meet the monitoring requirement of subsection (a) of this section shall comply with the following.

(1) The PEMS must predict the NOX emissions in the units of the applicable emission limitations of this division (relating to Cement Kilns).

(2) The PEMS must meet the requirements of §117.8100(b) of this title (relating to Emission Monitoring System Requirements for Industrial, Commercial, and Institutional Sources).

§117.3142. Emission Testing and Monitoring for Eight-Hour Attainment Demonstration.

(a) An owner or operator of any portland cement kiln that is subject to the source cap of §117.3123 of this title (relating to Dallas-Fort Worth Eight-Hour Ozone Attainment Demonstration Control Requirements) shall comply with the following monitoring requirements.

(1) The nitrogen oxides (NOX) monitoring requirements of §117.3140 of this title (relating to Continuous Demonstration of Compliance) apply. The following requirements also apply.

(A) For a single portland cement kiln with multiple exhaust stacks, each individual stack must be analyzed separately.

(B) One continuous emission monitoring system (CEMS) may be shared among portland cement kilns or among multiple exhaust stacks on a single portland cement kiln, provided:

(i) the exhaust stream of each stack is analyzed and reported separately; and

(ii) the CEMS meets the certification requirements of §117.3140(b) of this title for each exhaust stream while the CEMS is operating in the time-shared mode.

(C) All bypass stacks must be monitored continuously, in order to quantify emissions directed through the bypass stack. If the CEMS is located upstream of the bypass stack then:

(i) no effluent streams from other potential sources of NOX emissions may be introduced between the CEMS and the bypass stack; and

(ii) the owner or operator shall install, operate, and maintain a continuous monitoring system to record automatically the date, time, and duration of each event when the bypass stack is

open.

(2) Stack exhaust flow rate must be monitored with a flow meter using the monitoring specifications of 40 Code of Federal Regulations (CFR) Part 60, Appendix B, Performance Specification 6 or 40 CFR Part 75, Appendix A.

(3) For portland cement kilns that inject ammonia or urea for NOX control, fuel type notwithstanding, ammonia emissions must be monitored according to one of the methods specified in §117.8130(1), (2), or (4) of this title (relating to Ammonia Monitoring) to demonstrate compliance with the ammonia emission specification in §117.3123(f) of this title. The ammonia monitoring requirements of this paragraph only apply from March 1 to October 31 of each calendar year, or any other time the owner or operator injects ammonia or urea for NOX control.

(4) Installation of monitors must be performed in accordance with the schedule specified in §117.9320(c) of this title (relating to Compliance Schedule for Cement Kilns).

(b) The owner or operator of a portland cement kiln subject to the source cap requirements of §117.3123 of this title shall calculate NOX emissions for determining compliance with the source cap as follows. The calculation requirements of this subsection only apply from March 1 to October 31 of each calendar year.

(1) Hourly NOX emissions. Hourly NOX emissions for each kiln must be calculated according to the following equation.

$$EH = (C \times F \times K) \times (60 \text{ min / hour})$$

Where:

EH = total hourly NOX emissions from each kiln located at the account, in pounds per hour;

C = the block hour average NOX concentration, determined in accordance with subsection (a)(1) of this section, in parts per million by volume (ppmv), dry basis;

F = the block average exhaust flow rate, determined in accordance with subsection (a)(2) of this section, in dry standard cubic feet per minute; and

K = conversion factor, 1.194 x 10-7 pounds per standard cubic foot per ppmv (40 CFR Part 60, Appendix A, Method 19, Table 19-1).

(2) Daily NOX emissions. The daily total NOX emission for each kiln must be calculated as the sum of the hourly NOX emissions for each calendar day, reported in tons per day, and must be calculated according to the following equation.

$$ED = (\Sigma \, E \, H_i) / (2000)$$

Where: $i = 1$ to N;

ED = total daily NOX emissions from each kiln located at the account, in tons per day;

EH = total hourly NOX emissions from each kiln located at the account, in pounds per hour calculated according to the equation in subsection (b)(1) of this section; and

N = number of hours of operation per day for each kiln located at the account, in hours.

(3) Thirty-day rolling average. The 30-day rolling average NOX emissions for the account must be calculated according to the following equation.

$$E_{30day} = (\Sigma \Sigma ED_{i,j})/(N)$$

Where i = 1 to K and j = 1 to N

E_{30day} = 30-day rolling average NOX emissions in tons per day for the account, computed for the preceding 30 days;

ED = total daily NOX emissions from each kiln located at the account, in tons per day, calculated according to the equation in subsection (b)(2) of this section;

K = number of kilns located at the account; and

N = preceding 30 days.

§117.3145. Notification, Recordkeeping, and Reporting Requirements.

(a) Notification. The owner or operator of each portland cement kiln shall submit verbal notification to the executive director of the date of any continuous emissions monitoring system (CEMS) or predictive emissions monitoring system (PEMS) performance evaluation conducted under §117.3140 or §117.3142 of this title (relating to Continuous Demonstration of Compliance; and Emission Testing and Monitoring for Eight-Hour Attainment Demonstration) at least 15 days before such date followed by written notification within 15 days after testing is completed.

(b) Reporting of test results. The owner or operator of each portland cement kiln shall furnish the executive director and any local air pollution control agency having jurisdiction a copy of any CEMS or PEMS relative accuracy test audit conducted under §117.3140 or §117.3142 of this title:

(1) within 60 days after completion of such testing or evaluation; and

(2) not later than the appropriate compliance date in §117.9320 of this title (relating to Compliance Schedule for Cement Kilns).

(c) Recordkeeping. The owner or operator of a portland cement kiln subject to the requirements of this division (relating to Cement Kilns) shall maintain written or electronic records of the data specified in this subsection. Such records must be kept for a period of at least five years and must be made available upon request by authorized representatives of the executive director, United States Environmental Protection Agency, or local air pollution control agencies having jurisdiction. The records must include:

(1) for each kiln subject to §117.3110 or 117.3120 of this title (relating to Emission Specifications; and Source Cap), monitoring records of:

(A) daily and rolling 30-day average (and, for each kiln subject to the source cap in §117.3120 of this title, rolling 90-day average) nitrogen oxides (NOX) emissions (in pounds);

(B) daily and rolling 30-day average (and, for each kiln subject to the source cap in §117.3120 of this title, rolling 90-day average) production of clinker (in United States short tons); and

(C) average NOX emission rate (in pounds per ton (lb/ton) of clinker produced) on the basis of a rolling 30-day average (and, for each kiln subject to the source cap in §117.3120 of this title, a rolling 90-day average);

(2) records of the results of initial certification testing, evaluations, calibrations, checks,

adjustments, and maintenance of CEMS and PEMS;

(3) records of the results of any stack testing conducted; and

(4) for each kiln subject to the source cap in §117.3123 of this title (relating to Dallas-Fort Worth Eight-Hour Ozone Attainment Demonstration Control Requirements) and emission testing and monitoring requirements in §117.3142 of this title:

(A) records of the control plan required under §117.3123 of this title;

(B) hourly records of the average NOX concentration in parts per million by volume;

(C) hourly records of the NOX emissions in pounds per hour;

(D) daily records of the NOX emissions in tons per day;

(E) daily records of the NOX emissions in tons per day expressed as a 30-day rolling average;

(F) hourly records of the average exhaust gas flow rate in dry standard cubic feet per minute; and

(G) records of ammonia monitoring required under §117.3142(a)(3) of this title.

§117.9320. Compliance Schedule for Cement Kilns.

(a) Except as specified in subsection (c) of this section, the owner or operator of each portland cement kiln placed into service before December 31, 1999, in Bexar, Comal, Ellis, Hays, and McLennan Counties shall be in compliance with the requirements of Subchapter E, Division 2 of this chapter (relating to Cement Kilns) as soon as practicable, but no later than the following dates:

(1) May 1, 2003, for cement kilns in Ellis County; and

(2) May 1, 2005, for cement kilns in Bexar, Comal, Hays, and McLennan Counties.

(b) Notwithstanding subsection (a)(1) of this section, for a cement kiln in Ellis County that the owner or operator has filed an application for modification of its facility to meet the requirements of Subchapter E, Division 2 of this chapter on or before May 30, 2003, the compliance schedule is extended until six months after the issuance of the permit for operation of a low-NOX burner and 12 months after issuance of the permit for operation of a secondary combustion system. Such application(s) must relate only to those modifications required to comply with Subchapter E, Division 2 of this chapter, and any issues incident thereto.

(c) The owner or operator of each portland cement kiln in Ellis County shall comply with the requirements of §117.3123 and §117.3142 of this title (relating to Dallas-Fort Worth Eight-Hour Ozone Attainment Demonstration Control Requirements; and Emission Testing and Monitoring for Eight-Hour Attainment Demonstration), and the applicable requirements of §117.3145 of this title (relating to Notification, Recordkeeping, and Reporting Requirements) that are associated with §117.3123 and §117.3142 of this title, as soon as practicable, but no later than March 1, 2009.

(1) The provisions regarding extension of compliance schedules in subsection (b) of this section do not apply to this subsection or the requirements of §117.3123, §117.3142, or the applicable requirements of §117.3145 of this title.

(2) If a contested case hearing is granted as a direct result of a permit application necessary to comply with the requirements of §117.3123 of this title, the compliance date of this subsection for the site affected by the contested case hearing is extended until no later than March

1, 2010. The compliance date for the affected site remains March 1, 2009, if:

(A) a contested case hearing is granted as a result of a permit application that includes modifications necessary to comply with §117.3123 of this title, but the contested case hearing is the result of modifications included in the permit that are unrelated to compliance with §117.3123 of this title, then the compliance date for the affected site remains March 1, 2009; or

(B) a contested case hearing is granted at the request of the owner or operator of the affected portland cement kiln or any third party affiliated with the owner or operator.