

The Texas Commission on Environmental Quality (commission) adopts amended §§117.260, 117.265, 117.279, and 117.283, concerning Cement Kilns; and §117.524 and §117.570, concerning Administrative Provisions; and corresponding revisions to the state implementation plan (SIP). Sections 117.265, 117.279, 117.283, and 117.524 are adopted *with changes* to the proposed text as published in the November 8, 2002 issue of the *Texas Register* (27 TexReg 10562). Sections 117.260 and 117.570 are adopted *without changes* to the proposed text and will not be republished.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

On April 19, 2000 the commission adopted rules, which were published in the May 5, 2000 issue of the *Texas Register* (25 TexReg 4101), as part of the SIP control strategy for the Dallas/Fort Worth (DFW) ozone nonattainment area to achieve attainment with the national ambient air quality standard (NAAQS) for ozone. The adopted rules required portland cement kilns in Bexar, Comal, Ellis, Hays, and McLennan Counties to meet specific nitrogen oxides (NO_x) emission limits.

Under the adopted rules, owners or operators of cement kilns were given several options to meet the emission requirements in Chapter 117. Specifically, owners or operators of cement kilns have the option of complying with an emission limit measured in pounds of NO_x per ton (lbs/ton) of clinker produced. Compliance with the emission limits may be achieved on the basis of a weighted average if there are multiple kilns at the same account that are subject to the same limit. Also, owners or operators of wet-process cement kilns have a technology option in which compliance is through installation of low-NO_x burners and mid-kiln firing. Finally, owners or operators of cement kilns have the option of complying through a source cap which requires NO_x emission reductions of at least 30%

from the total NO_x emissions from all cement kilns in the account's 1996 emissions inventory, on a 30-day rolling average basis.

The purpose of this adoption is to give the owners and operators of cement kilns in the affected counties additional flexibility in meeting their NO_x reduction requirements through either the use of a technology option (for dry-process cement kilns) or emission reduction credits (ERCs). In addition, owners and operators of wet-process kilns can, in lieu of mid-kiln firing, use some other form of secondary combustion which achieves equivalent levels of NO_x reductions, or can make other additions or changes to the kiln system which achieve at least a 30% reduction in NO_x emissions. Finally, owners and operators will be able to use a 90-day rolling average for determination of compliance with the source cap in lieu of the current 30-day rolling average.

The adopted amendments to the Chapter 117 cement kiln rules modify the existing rules and result in a similar level of emission reductions. Therefore, the NO_x reductions previously claimed in the DFW Attainment Demonstration SIP will, as a result of this rulemaking, be achieved through alternate, but equivalent, Chapter 117 rules. Additionally, the flexibility in these adoptions will settle a lawsuit filed by two cement companies challenging the adoption of the original cement kiln rules. If this lawsuit is settled, compliance by the regulated community is more likely, thus providing more certainty that emission reductions needed for the SIP will actually occur.

In addition, the adopted amendments to Chapter 117 and revisions to the SIP will improve implementation of Chapter 117 by correcting typographical errors, deleting unnecessary section title references, replacing ambiguous language, and deleting obsolete language.

SECTION BY SECTION DISCUSSION

The adopted amendment to §117.260, concerning Cement Kiln Definitions, will revise a reference to the Texas Natural Resource Conservation Commission (the commission's former name) for consistency with the agency's style guidelines, delete unnecessary section title references, and add definitions of indirect-firing system, low-NO_x precalciner, and secondary combustion. Subsequent definitions are renumbered to accommodate the new definitions.

The adopted amendment to §117.260 will also revise the definition of long dry kiln and long wet kiln to delete references to the kiln length because the appropriate criterion is whether or not the inlet feed to the kiln is a slurry; i.e., the kiln length is irrelevant to this determination. In addition, the adopted amendment to §117.260 will revise the definition of low-NO_x burner to include design criteria for dry-process kilns.

Finally, the adopted amendment to §117.260 will revise the definition of mid-kiln firing to specify that this term is applicable to long wet kilns and long dry kilns, and will add the phrase "or to" in order to specify that solid fuel can be delivered to an intermediate point in the kiln either vertically through a trapdoor in the kiln wall or horizontally from the end of the kiln.

The adopted amendment to §117.265, concerning Emission Specifications, will specify that the existing technology option of §117.265(c) is applicable to long wet kilns and long dry kilns. In addition, the adopted amendment to §117.265(c) will add flexibility by allowing owners and operators of wet-process kilns, in lieu of mid-kiln firing, to use some other form of secondary combustion which achieves equivalent levels of NO_x reductions, or to make other additions or changes to the kiln system which achieve at least a 30% reduction in NO_x emissions.

The adopted amendment to §117.265 will also add §117.265(d), which establishes a technology option for preheater kilns and precalciner kilns.

Finally, the adopted amendment to §117.265 will add §117.265(e), which specifies that ERCs may be used to meet the NO_x control requirements in accordance with §117.570, concerning Use of Emissions Credits for Compliance.

The adopted amendment to §117.279, concerning Notification, Recordkeeping, and Reporting Requirements, will revise §117.279(c)(1) to include a 90-day averaging period for consistency with the adopted revisions to §117.283.

The adopted amendment to §117.283, concerning Source Cap, will revise §117.283(a) - (d) from a 30-day averaging period to a 90-day averaging period for consistency with the calculation of the ozone season daily emissions in the 1996 emissions inventory, upon which the source cap is based. In addition, the adopted amendment to §117.283(a) will specify that only hourly emissions data on or after

the compliance date is included in determining compliance with the source cap. The adopted amendment to §117.283 will also specify that for sources opting to use the source cap, the initial control plan is due by December 31 of the year preceding the final compliance date specified in §117.524, concerning Compliance Schedule for Cement Kilns.

The adopted amendment to §117.524 will add §117.524(b), which extends the compliance schedule until six months after the issuance of the permit for operation of a low-NO_x burner and 12 months after issuance of the permit for operation of a secondary combustion system for cement kilns in Ellis County, provided that the owner or operator has filed an application for modification of its facility to meet the requirements of 30 TAC Chapter 117, Subchapter B, Division 4 on or before May 30, 2003 (approximately two months after the effective date of the rule revisions). This is necessary due to the possibility of a hearing request on the permit application amendment, which could delay the implementation of NO_x control measures. The compliance date extension is limited to permit applications concerning only those modifications necessary to comply with the NO_x control requirements of this division.

The adopted amendment to §117.570 will add §§117.135, 117.265, and 117.283 to the sections listed in §117.570(a) for which ERCs may be used for compliance. The addition of §117.265 and §117.283 is necessary for consistency with adopted §117.265(e) and §117.283(f), and the addition of §117.135 corrects an inadvertent omission in previous rulemaking and is necessary to allow electric generating facilities in east and central Texas to use ERCs for compliance. The adopted amendment to §117.570

also corrects typographical errors in the definitions of the variables ER_{OLD} and ER_{NEW} in the figure in §117.570(d).

FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission has reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and has determined that the rulemaking does not meet the definition of a “major environmental rule” as defined in that statute. A “major environmental rule” means a rule, the specific intent of which, is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state.

The commission is adopting the amendments to Chapter 117 and revisions to the SIP to allow greater flexibility for cement kilns in the affected counties to meet NO_x emission limitations. The adopted amendments do not adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state; therefore, these adopted amendments do not constitute a major environmental rule. The amendments will provide flexibility to the regulated community to allow new options for compliance while still achieving the reductions needed to achieve and maintain attainment in east and central Texas. In addition, Texas Government Code, §2001.0225, only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by

federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. This rulemaking is not subject to the regulatory analysis provisions of §2001.0225(b), because the adopted rules do not meet any of the four applicability requirements. Specifically, the cement kiln requirements were developed in order to meet the ozone NAAQS set by the United States Environmental Protection Agency (EPA) under the Federal Clean Air Act (FCAA), §109 (42 United States Code (USC), §7409), and therefore meet a federal requirement. Provisions of 42 USC, §7410, require states to adopt a SIP which provides for “implementation, maintenance, and enforcement” of the primary NAAQS in each air quality control region of the state. This rulemaking would provide flexibility to help ensure that the reductions needed are actually accomplished. The rulemaking does not exceed a standard set by federal law, exceed an express requirement of state law (unless specifically required by federal law), or exceed a requirement of a delegation agreement. The rulemaking was not developed solely under the general powers of the agency, but was specifically developed to meet the NAAQS established under federal law and authorized under Texas Clean Air Act (TCAA), §§382.011, 382.012, 382.016, 382.017, and 382.051(d), as well as under 42 USC, §7410(a)(2)(A). The commission received no comments on the draft regulatory impact analysis.

TAKINGS IMPACT ASSESSMENT

The commission completed a takings impact analysis for the adopted rules under Texas Government Code, §2007.043. The specific purposes of this rulemaking are to allow greater flexibility for cement

kilns in the affected counties to meet NO_x emission limitations, achieve reductions in ozone formation in the DFW ozone nonattainment area, help bring DFW into compliance with the air quality standards established under federal law as NAAQS for ozone, and maintain air quality in east and central Texas.

Promulgation and enforcement of the rules will not burden private real property. The adopted rulemaking does not affect private property in a manner which restricts or limits an owner's right to the property that would otherwise exist in the absence of a governmental action. Consequently, the adopted rulemaking does not meet the definition of a takings under Texas Government Code, §2007.002(5).

Although the adopted rulemaking does not directly prevent a nuisance or prevent an immediate threat to life or property, it does prevent a real and substantial threat to public health and safety, and partially fulfills a federal mandate under USC, §7410. Specifically, the emission limitations and control requirements within this proposal were developed in order to meet the ozone NAAQS set by the EPA under USC, §7409. States are primarily responsible for ensuring attainment and maintenance of the NAAQS once the EPA has established them. Under USC, §7410 and related provisions, states must submit, for approval by the EPA, SIPs that provide for the attainment and maintenance of NAAQS through control programs directed to sources of the pollutants involved. Therefore, the purpose of the rulemaking is to implement a NO_x strategy which is necessary for the DFW area to meet the air quality standards established under federal law and to maintain air quality in east and central Texas.

Consequently, the exemption which applies to this rulemaking is that of an action reasonably taken to fulfill an obligation mandated by federal law. Therefore, these adopted rules will not constitute a takings under Texas Government Code, Chapter 2007.

CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed the adopted rulemaking and found that the adoption is a rulemaking identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11 and therefore, required applicable goals and policies of the Coastal Management Program (CMP) to be considered during the rulemaking process.

The commission prepared a consistency determination for the adopted rules under 31 TAC §505.22 and found that the adopted rulemaking is consistent with the applicable CMP goals and policies. The CMP goal applicable to this rulemaking action is the goal to protect, preserve, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas (31 TAC §501.12(1)). No new sources of air contaminants will be authorized as a result of these rules. The CMP policy applicable to this rulemaking action is the policy that commission rules comply with regulations in 40 Code of Federal Regulations (CFR), to protect and enhance air quality in the coastal area (31 TAC §501.14(q)). This rulemaking action complies with 40 CFR. Therefore, in compliance with §505.22(e), this rulemaking action is consistent with CMP goals and policies. The commission received no comments on the consistency of the proposed rule amendments with applicable CMP goals and policies.

EFFECT ON SITES SUBJECT TO THE FEDERAL OPERATING PERMIT PROGRAM

Chapter 117 is an applicable requirement under 30 TAC Chapter 122, Federal Operating Permits Program; therefore, owners or operators subject to the Federal Operating Permit Program must, consistent with the revision process in Chapter 122, revise their operating permits to include the revised Chapter 117 requirements for each emission unit affected by the revisions to Chapter 117 at their sites.

PUBLIC COMMENT

The commission held public hearings on this proposal in Arlington on December 5, 2002, and in Austin on December 9, 2002. The period for receipt of written comments closed on December 9, 2002.

Forty-five commenters submitted testimony on the proposal. EPA supported the rule provided that certain revisions were made. Jenkens & Gilchrist on behalf of Alamo Cement Company, Capitol Aggregates, Ltd., CEMEX, Inc., North Texas Cement Company, and TXI Operations, LP (Jenkens); Lehigh White Cement Company (Lehigh); and Thompson & Knight on behalf of Texas Lehigh Cement Company LP (Thompson) supported the proposed revisions, but suggested modifications or clarifications. Blue Skies Alliance; Downwinders at Risk (DAR); Sierra Club - Dallas Regional Group (Sierra Club); and 38 individuals opposed the proposed rules.

RESPONSE TO COMMENTS

GENERAL

DAR and an individual asked if TXI will be required to obtain an amendment to its permit to authorize the use of tires as a fuel. Blue Skies Alliance requested an opportunity to comment again after it has the results of the TXI trial burn.

Response

It should be noted that any potential permit actions are outside the scope of this rulemaking. This rule does not provide any authorization to emit for cement kilns; to the extent that additional authorization is needed for the changes made to a kiln in order to comply with the rule, the

permitting rules and procedures will apply. TXI received approval to conduct a limited purpose trial burn by letter dated July 18, 2002. This approval only allowed limited testing with tires as fuel in one of TXI's wet-process kilns in Midlothian. TXI has submitted a Class 3 modification application to its permit (HW-50316-001) seeking approval to conduct a trial burn and authorization to add the tire feeding system and low-NO_x burners to its wet-process cement kilns which are authorized to burn waste-derived fuel. If TXI chooses to pursue burning of tires for fuel on a permanent basis, the application for permit modification would have to be in accordance with 30 TAC §305.69 and the permit to incorporate the results of the trial burn and authorize burning tires on an ongoing basis. A Class 3 modification application must meet the requirements of §305.69(d). There is a requirement for public notice and a 60-day public comment period. A public hearing may be granted pursuant to the requirements under 30 TAC Chapter 50, Action on Applications and Other Authorizations and Chapter 55, Requests for Reconsideration and Contested Case Hearings; Public Comment. No changes to the rule were made in response to this comment.

An individual recommended that the state review TXI's permit and have the necessary emission control devices placed on the stacks. The individual commented further that there are other states that have done risk assessments and trial burns and that these states know before they pass any rules what the effects will be. DAR expressed similar concerns.

Response

As noted in the response to the previous comment, any potential permit actions are outside the scope of this rulemaking. The rule proposal only addresses NO_x emissions and does not address emissions of air toxics, which are regulated by other commission rules and permits as well as a variety of federal standards. However, the Community Air Toxics Monitoring network includes a total of 44 monitors in 18 counties, with two in Ellis County, two in Dallas County, and one in Tarrant County. Should this air toxics monitoring indicate levels of concern, the commission will take appropriate action to ensure that health effects concerns are thoroughly addressed. No changes to the rule were made in response to this comment.

An individual commented that health has deteriorated since 1988 with TXI's use of waste-derived fuel and also complained of the burning smell.

Response

In order to address previous odor complaints related to sulfur compounds, the commission has required TXI's wet-process kilns to maintain an average oxygen content, as measured at the kiln exit, of at least 0.75% by volume on a five-minute average. To the commission's knowledge, this successfully resolved the odor situation. Regarding any current odor or other complaints the individual may have, the commission recommends that the individual contact the regional office in Fort Worth at (817) 588-5800 for investigation and response as appropriate. No changes to the rules were made in response to this comment.

Blue Skies Alliance, DAR, Sierra Club, and 24 individuals opposed the state giving up to \$2 million to subsidize the startup of tire burning at cement kilns. Blue Skies Alliance and DAR commented that the state should subsidize cleanups rather than pollution, and asserted that the \$2 million subsidy offers an incentive to burn tires in the dirtiest kilns without giving money to put on modern pollution technology.

Response

The \$2 million fund to which the commenters are referring was established by the 77th Legislature, 2001, to support the use of tire-derived fuel and to implement the settlement of lawsuits related to the SIP. Legislative funding of pollution control projects is beyond the scope of this rulemaking. The commission has made no change in response to the comments.

An individual commented that the American Concrete Pressure Pipe Association and some Texas cities have banned the use of cement made at waste-burning plants and cited three EPA studies that conclude that contaminants can leak from cement after it is cured in the presence of leaching solutions like rain water. The commenter concluded by saying that this is an unacceptable method of producing concrete if it is going to be around people, while acknowledging that "this has nothing to do with the air quality issues."

Response

As noted earlier in this preamble, the rule proposal only addresses NO_x emissions. It does not address air toxics, water quality, or waste, which are regulated by other commission rules and

permits as well as a variety of federal standards. The individual's comment is beyond the scope of this rulemaking, and the commission has made no change in response to the comment.

Blue Skies Alliance commented that DFW is in violation of the one-hour and eight-hour ozone standards and asserted that the proposed rules undermine these clean air goals instead of working toward meeting them.

Response

EPA has not yet designated any areas as nonattainment with the eight-hour ozone standard and is not scheduled to do so until April 15, 2004. The commission concurs that DFW has been designated as nonattainment with the one-hour ozone standard, but disagrees that the rule revisions undermine progress toward meeting this standard. As noted earlier in this preamble, the amendments to the Chapter 117 cement kiln rules modify the existing rules and result in a similar level of emissions reductions. Therefore, the NO_x reductions previously claimed in the DFW Attainment Demonstration SIP will, as a result of this rulemaking, be achieved through alternate, but equivalent, Chapter 117 rules. Additionally, the flexibility in these adoptions will settle a lawsuit filed by two cement companies challenging the adoption of the original cement kiln rules. If this lawsuit is settled, compliance by the regulated community is more likely, thus providing more certainty that emission reductions needed for the SIP will actually occur. No changes to the rule were made in response to this comment.

Lehigh commented that there should be an expenditure limitation and that sources should not be required to expend more than \$2,000 per ton of NO_x emissions reduced. Lehigh suggested that when the incremental cost for reducing emissions at a given source exceeds this level, the source should be treated as having complied with the Chapter 117 rules.

Response

The commission agrees that cost should be taken into account in the development of control strategies and has done so. However, the commission disagrees with the suggested concept of including a maximum cost (in dollars per ton of NO_x reduced) in the rules. Such a concept would not ensure that the necessary emission reductions occur. In addition, the concept raises numerous issues such as the calculation methodology, enforceability, and especially the cutoff level. For example, the commission is aware of one company that spent approximately \$31,000 per ton to comply in an ozone nonattainment area while the company was in Chapter 11 bankruptcy. Finally the commission has provided the opportunity for the use of emission reduction credits in lieu of compliance with this rule. In the event that the cost of certain technologies is high, companies would be able to seek out more cost effective strategies within the area to reduce their cost of compliance. No changes to the rule were made in response to this comment.

Lehigh commented that an exemption should be included for cement plants undergoing new source review (NSR) as follows:

"An existing affected unit at a portland cement plant is exempt from NO_x emissions reductions provided that:

1. A permit for a new kiln had been issued by the Department prior to May of the designated year, as specified in §117.524 of this title (Compliance Schedule for Cement Kilns), that would replace an existing kiln system; and
2. The new kiln system would be installed using best available control technology (BACT) for NO_x emissions; and
3. The new kiln system would become fully operational within three years of May of the designated year, as specified in §117.524 of this title (Compliance Schedule for Cement Kilns); and
4. Old affected kiln systems are shut down after startup of the new kiln system."

Response

The commission disagrees with the commenter's suggestion because if implemented, the result would be no emission reductions from certain cement kilns to which technically feasible controls can be applied to accomplish the necessary emission reductions. The commenter's suggestion would also result in no reductions for up to three years after the final compliance date. In the event that an owner or operator plans to replace an existing kiln with a new kiln and therefore would prefer not to spend money on controlling the existing kiln, an option would be to use discrete emission reduction credits (DERCs) during the interim period, as allowed by §117.265(e) in conjunction with §117.570. No changes to the rule were made in response to this comment.

Section 117.260 (Definitions)

Sierra Club asserted that the revisions to the definitions of "low-NO_x burner" and "mid-kiln firing" would allow the use of an unproven, mid-kiln process.

Response

The commission disagrees with this comment. The revisions to the definition of low-NO_x burner add design criteria for dry-process kilns. This revision is unrelated to the definition of mid-kiln firing, which is being revised to specify that this term is applicable to long wet kilns and long dry kilns, and to specify that solid fuel can be delivered to an intermediate point in the kiln either vertically through the kiln wall or horizontally from the end of the kiln. This revision is appropriate because mid-kiln firing has been demonstrated to reduce NO_x emissions, regardless of the mechanism for transporting the fuel to the mid-kiln firing point. No changes to the rule were made in response to this comment.

Lehigh commented that the rules should include an exemption stating that the requirements do not apply to startup and shutdown periods and periods of malfunction or regularly scheduled maintenance activities. Lehigh also suggested the addition of definitions for malfunction, shutdown, and startup.

Response

The commission disagrees with this comment. Emissions events and scheduled maintenance, startup, and shutdown activities are addressed by 30 TAC Chapter 101, Subchapter F (Emissions Events and Scheduled Maintenance, Startup, and Shutdown Activities). The associated definitions of emissions event, reportable emissions event, reportable quantity, and scheduled maintenance, startup, or shutdown activity are found in 30 TAC §101.1 (Definitions). No changes to the rule were made in response to this comment.

Lehigh commented that the definition of low-NO_x burner should be changed to read: "(5) a type of cement kiln burner (a device that functions as an injector of fuel and combustion air into the kiln to produce a flame that burns as close as possible to the centerline of the kiln) that has a series of channels or orifices that: (A) 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 (B) impart high momentum and turbulence to the fuel stream to facilitate mixing of the fuel and secondary air."

Response

Lehigh did not explain its reasoning for suggesting this revision, nor does the suggested change appear to be necessary. Therefore, the commission has made no change in response to the comment.

Section 117.265(a)

Lehigh commented that the rule should only apply during the ozone season period, defined as May - September, which it asserted is consistent with EPA guidance provided in the NO_x federal implementation plan.

Response

The issue of seasonal controls involves significant air quality considerations. The season for the one-hour ozone standard in DFW has been defined by EPA policy by the monitoring period in 40 CFR Part 58, Appendix D as an eight-month period from March 1 - October 31. For

Beaumont/Port Arthur (BPA) and Houston/Galveston (HGA), the season for the one-hour ozone standard has been defined as year-round by EPA policy by the monitoring period in 40 CFR Part 58, Appendix D. Although exceedances of the one-hour standard in DFW generally have been limited to the five months of June - October, there may be ozone and other environmental benefits to year-long NO_x control in DFW. Regional transport may move DFW NO_x southerly into areas with more of a year-long potential for ozone exceedances, such as BPA and HGA. Year-long controls could help prevent current near-nonattainment areas from becoming nonattainment under the ozone NAAQS. Locally, year-long controls would reduce nitrates in the winter season. Nitrates contribute to the winter visibility impairment in DFW sometimes called the white or brown cloud. In addition, NO_x adds to the nitrification of surface waters, an adverse ecological impact which at times may contribute to algae buildup and related problems.

Weighed against the potential approvability issues and loss of environmental benefits are the reductions in costs and effort that seasonal NO_x controls would offer. The commission expects that the cement kiln requirements will be complied with in most cases through the use of additional combustion controls, for which the expense is primarily capital rather than operating. Capital costs must be incurred regardless of the length of the compliance season. The primary benefit to the regulated community of an eight-month compliance season would be a reduced compliance effort during a portion of the normal unit outage period, when test firing and other scheduled maintenance may occur. While not minimizing these efforts, the fact that there has been a documented visibility problem in DFW in the winter in particular has to be weighed carefully against the additional effort. In this regard, year-long compliance makes sense and is

consistent with the application of Chapter 117 elsewhere in the state. The commission has made no change in response to this comment.

Blue Skies Alliance, DAR, EPA, Sierra Club, and four individuals opposed changing the 30-day rolling average to a 365-day rolling average. Blue Skies Alliance, DAR, Sierra Club, and four individuals stated that a 365-day averaging period allows for pollution spikes and, in general, increased emissions. EPA similarly commented that it does not believe that a 365-day rolling average provides for adequately determining compliance with the emission limitation. EPA expressed the belief that cement production varies from month to month, given the increase in construction-related activities during the spring and summer. EPA stated that monitored ozone readings for Texas indicate that the ozone design value exceedances predominantly occur during the summer and early fall. EPA further stated that if the annual production rates are constant, then the 30-day rolling average warrants no revision. EPA stated that it considers replacing the existing 30-day rolling average period with a 365-day rolling average period as lowering the bar of compliance. EPA noted that the proposed revision would allow the commission to settle a lawsuit and stated that lawsuit settlement is not acceptable justification for the revision. EPA stated that retaining the proposed 365-day averaging period requires a technical explanation and justification using actual and historical data information, for each one of the affected sources, substantiating the change from the existing 30-day rolling average basis to the proposed 365-day rolling average basis.

Jenkins commented that cement production in Texas is characterized by almost continuous operations 365 days per year because the Texas cement industry does not typically have scheduled downtime in the

winter months. Jenkens asserted that the stack emissions from each kiln remain relatively constant throughout the year. Jenkens stated that the averaging period applies to the emission specifications in §117.265(a) and the source cap in §117.283 and noted that the technology options offered in §117.265(c) and (d) are not subject to the averaging period. Jenkens stated that EPA's proposed federal implementation plan for cement kilns includes only a technology option for which no averaging period is included. Jenkens stated that the Chapter 117 rule only includes the averaging time provision for alternatives that go beyond EPA alternatives in the federal implementation plan.

Jenkens asserted that the 365-day rolling average is more technically defensible than the existing 30-day rolling average due to the variable nature of NO_x emissions from cement kilns and that its review of actual operating data and emission data has shown that NO_x emissions are extremely variable and can spike up or down during a kiln's operation. Jenkens stated that these data would make it extremely difficult to comply with the emission specifications set out in §117.265(a) and stated that the emission specification for wet-process cement kilns in Ellis County is already 33% lower (4.0 pounds/ton vs. 6.0 pounds/ton) than the emission specification EPA determined would be capable of being met by wet-process cement kilns, on average, when EPA studied the nationwide emissions of NO_x from such kilns. Jenkens also stated that changing the averaging period will make the cement kiln rules more consistent with the NO_x rules applicable to electric generating facilities in east and central Texas (which specify compliance with the electric generating facility emission specifications on an annual (calendar year average basis)) and recognizes the variable nature of NO_x emissions from cement kilns. Jenkens also stated that cement plants are subject to short-term NO_x emission rate limits in their air quality permits.

Response

The commission assumes that the production goal at a cement plant is to operate as continuously as possible, with downtime typically not exceeding approximately 5.0 to 10%. Review of production data indicates that cement production does not vary particularly by season. Scheduled shutdowns on the order of two weeks in length are no more likely to occur during the winter months than any other time of year because cement is easily stored in silos with a significant total storage capacity. Consequently, a cement plant can readily continue to supply cement to customers during a kiln shutdown because of the significant quantity of available cement storage capacity.

However, NO_x emissions (on a pound per ton of clinker basis) are erratic from one day to the next. This variability in pounds of NO_x per ton of clinker is smoothed out considerably when evaluated on a 30-day rolling average. There is no question that a longer averaging period represents a less difficult standard than a shorter averaging period, as confirmed by a review of available NO_x continuous emissions monitoring system (CEMS) data. Based on limited data for two cement plants, a 365-day average is approximately 5.0 to 10% higher than a 30-day average.

On September 24, 1998, in accordance with 42 USC, §7410, EPA issued a final rule to require 22 states and the District of Columbia to submit SIP revisions to prohibit specified amounts of emissions of NO_x (see the October 27, 1998 issue of the *Federal Register* (63 FR 57356)). EPA expects to finalize its October 27, 1998, NO_x SIP Call shortly (see the January 16, 2003 issue of the *Federal Register* (68 FR 2215)).

On October 21, 1998, EPA proposed federal implementation plans that may be needed if any state fails to revise its SIP to comply with the NO_x SIP Call (see the October 27, 1998 issue of the *Federal Register* (63 FR 56393)). The federal implementation plan proposes to control NO_x emissions from large stationary sources, including cement kilns. Specifically, the federal implementation plan proposed to require installation and operation of low-NO_x burners, mid-kiln firing, or "alternative control techniques," subject to approval by EPA, that achieve at least the same 30% emissions decrease as low-NO_x burners or mid-kiln firing (see the October 21, 1998 issue of the *Federal Register* (63 FR 56416)). The proposal listed emission rates for each type of kiln that would be considered to meet the "alternative control techniques" test.

Jenkins is correct that an averaging period only applies to the emission specifications in §117.265(a) and the source cap in §117.283. The commission further agrees that an averaging period obviously does not apply to the technology options available in §117.265(c) and (d). Regarding the emission specification of 4.0 pounds of NO_x per ton of clinker in §117.265(a)(1)(B) for wet-process cement kilns in Ellis County, the commission agrees that this limit is more stringent than the emission specification of 6.0 pounds of NO_x per ton of clinker that EPA determined could be achieved using low-NO_x burners or mid-kiln firing (see the October 21, 1998 issue of the *Federal Register* (63 FR 56416)). However, the commission notes that the Chapter 117 rules offer multiple alternatives to direct compliance with the emission specifications in §117.265, including the technology options available in §117.265(c) and (d), the use of emission credits in accordance with §117.570, and the source cap of §117.283.

Regarding Jenkens' comparison of the cement kiln rules' averaging period to that of the electric generating facility rules of Chapter 117, Subchapter B, Division 2, concerning Utility Electric Generation in East and Central Texas, the commission believes that there is no reason that cement kilns and electric generating facilities must have the same averaging time. The averaging period for the Subchapter B, Division 2 electric generating facility rules was established to be consistent with the driving force behind those rules. Specifically, Senate Bill 7 (SB 7), 76th Legislature, 1999, amended Texas Utilities Code (TUC), Title 2, concerning Public Utility Regulatory Act, Subtitle B, concerning Electric Utilities, and created a new TUC, Chapter 39, concerning Restructuring of Electric Utility Industry. SB 7 required the commission to implement the permitting and allowance requirements of TUC, §39.264, concerning Emissions Reductions of "Grandfathered Facilities." Section 39.264 requires electric generating facilities that were existing on January 1, 1999, and that were not subject to the requirement to obtain a permit under TCAA, §382.0518(g), to obtain a permit from the commission. These facilities are referred to as grandfathered facilities. A grandfathered facility is one that existed at the time the legislature amended the TCAA in 1971. These facilities were not required to comply with (i.e., grandfathered from) the then new requirement to obtain permits for construction or modifications of facilities that emit air contaminants.

TUC, §39.264 requires owners or operators of grandfathered electric generating facilities to apply for a permit to emit NO_x and, for coal-fired grandfathered electric generating facilities, sulfur dioxide and particulate matter through opacity limitations. These applications were due on or before September 1, 2000. A grandfathered electric generating facility that does not obtain a

permit may not operate after May 1, 2003, unless the commission finds good cause for an extension. It is the intent of TUC, §39.264 that for the 12-month period beginning May 1, 2003, and for each 12-month period following, annual emissions of NO_x from grandfathered electric generating facilities not exceed 50% of the NO_x emissions reported to the commission for 1997. An annual averaging period was established in Subchapter B, Division 2, for consistency with the intent of TUC, §39.264, and the annual averaging period of 30 TAC Chapter 101, Subchapter H, Division 2, concerning Emissions Banking and Trading of Allowances, which the commission adopted on December 16, 1999 in order to implement SB 7. There is no such regulatory driver for an annual averaging period for the Chapter 117 cement kiln rules.

Regarding Jenkins' comment that cement plants are subject to short-term NO_x emission limits in air permits, the commission notes that air permits include a maximum hourly mass emission rate for various pollutants. However, because an hourly limit must take into account the maximum short-term emission rates that could occur during normal operations, it is higher than the value that would be determined by simply dividing a long-term (annual or 30-day average) value. Therefore, the fact that cement plants are subject to short-term NO_x emission limits in air permits is not relevant.

For the reasons delineated in the preceding paragraphs, the commission has determined that a 30-day rolling average is appropriate for the emission specifications in §117.265. Therefore, the commission has deleted the proposed 365-day rolling average in §117.265(a) and retained a 30-day rolling average. For the source cap available under §117.283, the commission notes that the 2002

Emissions Inventory Guidelines guidance document, available at http://www.tnrcc.state.tx.us/air/aqp/eidata/rg_360_02.PDF, specifies that ozone season daily emissions are to be calculated as the average daily emission rates during the ozone season, which for emissions inventory purposes is defined as June 1- August 31, inclusive. The *Emissions Inventory Guidelines* guidance document further specifies that estimating the ozone season emission rates from the associated annual rates is unacceptable. These same requirements were in place for the 1996 emissions inventory, which is the baseline for the source cap of §117.283. Because the ozone season daily NO_x emission rate represents a three-month average, the commission has revised §117.283(a) - (d) to specify use of a 90-day rolling average. (While June 1 - August 31 comprises a total of 92 days, the commission has selected a 90-day average for simplicity in the source cap rather than a 92-day average.) The commission also revised the recordkeeping requirements in §117.279(c)(1) to include a 90-day averaging period for consistency with §117.283(a) - (d), and has retained the existing 30-day averaging period for consistency with §117.265(a).

Jenkins stated that the nine cement plants located in east and central Texas (in Bexar, Comal, Ellis, Hayes, and McClennan Counties) contribute only approximately 2.9% of the total point source NO_x emissions in east and central Texas. Jenkins noted that existing modeling tended to show that these plants may have an impact on the DFW ozone nonattainment area but asserted that this modeling showed that even those cement plants closest to the DFW ozone nonattainment area (i.e., those in Ellis County) have only a negligible impact on the ozone levels in the DFW ozone nonattainment area.

Jenkins asserted that the ozone problems in the DFW nonattainment area are predominantly caused by mobile sources.

Response

As noted in the May 5, 2000 issue of the *Texas Register*, commission staff reviewed the 1997 emissions inventory and note that cement plants represent 26.1% of the permitted non-utility stationary NO_x sources in the 95 east and central Texas attainment counties and 13.7% of the total (permitted and grandfathered) non-utility stationary NO_x sources in these counties. Because cement plants are one of the largest stationary sources of NO_x emissions in the east and central Texas and because modeling has demonstrated that NO_x reductions from these sources are beneficial for meeting the one-hour ozone standard in DFW as well as in the east and central Texas counties, the commission believes it is appropriate to include these cement plants as part of a regional strategy to reduce NO_x emissions.

Mobile source emissions make varying contributions to ozone formation in the ozone nonattainment and near-nonattainment areas. There is no question that the largest contributor of ozone precursors in DFW is the mobile source category, but there is no basis for Jenkins' conclusion that point source controls are not beneficial in making progress toward attaining the ozone NAAQS, as demonstrated by the modeling described in the preamble to the Chapter 117 revisions published in the May 5, 2000 issue of the *Texas Register*. The commission agrees that mobile source emissions need to be reduced and notes that the SIP incorporates a variety of state and federal mobile source rules which will result in cleaner-burning gasoline, cleaner-burning

diesel fuel, cleaner large gasoline engines, cleaner new motor vehicles, an improved program for inspection and maintenance of motor vehicles, and a voluntary scrappage program to retire high-emitting motor vehicles.

Jenkins asserted that the proposed rule revisions apply all of the proven cement industry NO_x reduction technology to the plants that are affected. Jenkins asserted that low-NO_x burners, low-NO_x precalciners, and secondary combustion are the only technologies that have been proven to reduce NO_x in cement manufacturing and that other technologies are either unproven or inappropriate for specific cement manufacturing processes.

Response

The commission disagrees that low-NO_x burners, low-NO_x precalciners, and secondary combustion are the only technologies that have been proven to reduce NO_x in cement manufacturing and that other technologies are either unproven or inappropriate for specific cement manufacturing processes. Indeed, Jenkins' own clients use other NO_x control technology such as CemStar. In addition, post-combustion controls are available and technically feasible as described later in this preamble in the responses to comments on §117.265(c) and §117.265(c)(1).

Section 117.265(c)

DAR and Sierra Club commented that the commission is maintaining that cement kilns located in Ellis County will be able to burn tires in addition to hazardous waste as a means to make a 30% emissions reduction, while it does not guarantee the reductions by the SIP. Sierra Club commented that the

settlement agreement states that by installing a gunnax pneumatic gun, the "kiln operation is NOT required to meet the NO_x emissions limits of subsection (a) of this section," with subsection (a) referring to the 30% reduction required under the SIP. Sierra Club requested the removal of this language from the cement kiln rules, while DAR and 38 individuals likewise suggested that a 30% reduction be guaranteed. Similarly, Blue Skies Alliance commented that not requiring a cement kiln to meet the NO_x emissions in §117.265(a) is a huge loophole.

Response

On September 24, 1998, in accordance with 42 USC, §7410, EPA issued a final rule to require 22 states and the District of Columbia to submit SIP revisions to prohibit specified amounts of emissions of NO_x (see the October 27, 1998 issue of the *Federal Register* (63 FR 57356)). EPA expects to finalize its October 27, 1998, NO_x SIP Call shortly (see the January 16, 2003 issue of the *Federal Register* (68 FR 2215)).

On October 21, 1998, EPA proposed federal implementation plans that may be needed if any state fails to revise its SIP to comply with the NO_x SIP Call (see the October 27, 1998 issue of the *Federal Register* (63 FR 56393)). The federal implementation plan proposes to control NO_x emissions from large stationary sources, including cement kilns. Specifically, the federal implementation plan proposed to require installation and operation of low-NO_x burners, mid-kiln firing, or "alternative control techniques," subject to approval by EPA, that achieve at least the same 30% emissions decrease as low-NO_x burners or mid-kiln firing (see the October 21, 1998

issue of the *Federal Register* (63 FR 56416)). The proposal listed emission rates for each type of kiln that would be considered to meet the "alternative control techniques" test.

In the October 26, 2000 issue of the *Federal Register* (65 FR 64189), EPA published information to support estimates of costs and NO_x emissions reductions potential for cement kilns in the event that EPA issues a federal implementation plan because a state fails to respond adequately to the NO_x SIP Call. The new information in the October 26, 2000 issue of the *Federal Register* is primarily contained in "NO_x Control Technologies for the Cement Industry" (September 19, 2000), which was prepared for EPA by EC/R, Incorporated. This report updates information in the "Alternative Control Techniques Document-NO_x Emissions from Cement Manufacturing" (EPA-453/R-94-004), which was the primary reference used in preparing the cement kiln portion of the October 27, 1998 proposed federal implementation plan rulemaking. The September 2000 report includes updated information on uncontrolled NO_x emissions from cement kilns and on the current use, effectiveness, and cost of NO_x controls, including low-NO_x burners, mid-kiln firing, CemStar, and selective non-catalytic reduction (SNCR). In addition to low-NO_x burners and mid-kiln firing, Chapter 5 of the September 2000 EC/R report identifies the following NO_x control techniques that are also expected to achieve, on average, at least a 30% decrease in NO_x emissions: CemStar, low-NO_x precalciner, tire-derived fuel at a preheater or precalciner, and SNCR, including biosolids injection.

Therefore, while it is true that a cement kiln which complies with the Chapter 117 cement kiln rules through a technology option is not required to meet an emission specification under

§117.265(a), it is also true that EPA has determined that a 30% reduction in NO_x emissions can be achieved from cement kilns using cost-effective measures, including those identified in §117.265(c) and (d). In fact, it is uncommon for a commission air quality rule to contain a specific emission reduction percentage requirement. Rules which require a certain level of technology or a certain emission specification are much more common, and the commission then estimates the emission reductions for SIP quantification purposes. As noted previously in this preamble, TXI received approval to conduct a limited purpose trial burn by letter dated July 18, 2002. This approval only allowed limited testing with tires as fuel in one of TXI's wet-process kilns in Midlothian. Testing of TXI's Kiln No. 4 on November 22, 2002 revealed that firing four tires per minute resulted in a 64% reduction in NO_x, which is significantly better than the 30% NO_x reduction that EPA identified as the average expected reduction.

Lehigh commented on §117.265(c)(1) and stated that it should not be required to install a combination of controls (i.e., a low-NO_x burner and either mid-kiln firing, or some other form of secondary combustion achieving equivalent levels of NO_x reductions) because this is more stringent than the federal implementation plan.

Response

Lehigh is not required to install a combination of controls in order to comply with the Chapter 117 cement kiln rules. Instead, the technology option available under §117.265(c) is but one control option. In addition to the controls described in the previous paragraph, the commission notes that selective catalytic reduction (SCR) has been employed in boilers firing high sulfur fuel

oil (up to 5.4% sulfur) and on cement kilns in commercial demonstrations in Sweden and Germany. Although the use of SCR may be technically challenging, SCR catalyst formulations are adjustable to reduce sensitivities to various catalyst poisons. The inorganic compounds and particulate matter present in the exhaust streams of these applications degrade the performance more rapidly than cleaner fuels and exhaust streams, thereby shortening the life of the catalysts. Although catalyst replacement cost may be higher relative to a conventional SCR, SCR is still technically feasible.

In addition to SCR, there is an oxidation technology for NO_x reduction which has been successfully applied to a variety of full-scale commercial operations. This technology, low-temperature oxidation, injects ozone as the oxidant to form dinitrogen pentoxide (N₂O₅), which is then removed in a wet scrubber. Because N₂O₅ is highly soluble in water, this process produced NO_x removal efficiencies in the 99% range (i.e., achieved reductions to two parts per million NO_x) when demonstrated commercially on a natural gas-fired boiler in Los Angeles which began operation in October 1996. More recent full-scale commercial installations include: a natural gas-fired boiler in California, achieving 85% - 90% NO_x removal; a nitric acid pickling process in Pennsylvania, achieving 90% - 95% NO_x removal; a 25 megawatt coal-fired boiler in Ohio, achieving 85% - 90% NO_x removal; and a lead smelting furnace in California, achieving 80% NO_x removal. Recent pilot project demonstrations in HGA include a wood-fired boiler in summer 2002, and a fluid catalytic cracking unit in fall 2002. A cement kiln with an existing scrubber would logically be a good candidate for NO_x scrubber technology because of the potential

avoidance of capital expenditure for a new scrubber as well as the operational experience in place with the scrubber.

Finally, the federal implementation plan was formulated for the area to which it applies while the Chapter 117 rule requirements have been written to require the amount of reductions needed to achieve attainment of the NAAQS for Texas. While the federal implementation plan is useful as a reference point it does not necessarily meet the needs of the Texas SIP.

Section 117.265(d)

Thompson supported the commission's efforts to develop a more flexible technology-based approach to achieving the state's air quality goals, and specifically supported the incorporation of a technology option for dry-process cement kilns in the proposed §117.265(d). Thompson stated that this change is appropriate to recognize the demonstrated effectiveness of the more modern technology already in place at some of the cement plants in Texas.

Response

The commission appreciates the support for new §117.265(d).

Thompson stated that Texas Lehigh employs a low-NO_x precalciner at its plant in Buda, Texas, and commented that companies desiring to use the technology option should be able to confirm that their design satisfies the definition of the technology before the deadline for the notice required by proposed

§117.265(d). Thompson stated that §117.265(d) or the preamble should describe how these determinations are to be obtained.

Response

The commission disagrees that §117.265(d) should include an approval mechanism. However, an affected owner or operator may direct a written request for review and confirmation that a particular design satisfies the appropriate definition to the commission's Engineering Services Team.

Section 117.273 (Continuous Demonstration of Compliance)

Thompson questioned whether a CEMS already installed to meet existing permit conditions and certified in accordance with 40 CFR Part 60, Appendix B, would be required to recertify when §117.273 becomes applicable to the source.

Response

No revisions were proposed to the existing monitoring requirements of §117.273. However, §117.273(a) requires the owner or operator to install, calibrate, operate, and maintain a CEMS or predictive emissions monitoring system (PEMS) in accordance with the schedule in §117.524. No recertification is required if the initial certification meets the requirements of §117.273 and the owner or operator is continuing to comply with the requirements of §117.273.

Thompson questioned how the owner or operator should address days when less than 24 hours of CEMS data are obtained for calculating the rolling average. As an example, Thompson cited times when cylinder gas audits are conducted or when maintenance is conducted. Thompson questioned if the production for periods when the CEM is off-line are intended to be deducted from the total number of tons of clinker produced.

Response

The commission's intention for missing data is as follows. For each kiln equipped with a CEMS, the owner or operator should either use a PEMS in accordance with §117.273(c), or the maximum emission rate as measured by hourly emission rate testing conducted in accordance with 40 CFR Part 60, Appendix A, to provide emissions compliance data during periods when the CEMS is off-line. For each kiln equipped with a PEMS, the owner or operator should use the methods specified in 40 CFR §75.46 to provide emissions substitution data.

Section 117.283 (Source Cap)

Jenkins noted that the source cap in §117.283 includes not only cement kilns in existence in 1996 as well as any cement kilns subsequently placed into service in the five affected counties. Jenkins stated that cement plants have added approximately three million tons of production capacity since 1996, representing almost a 30% increase in production capacity, while the 30% reduction in NO_x emissions is based on the cement plants' 1996 emission inventories. Jenkins stated that for any plant that has added capacity since 1996, the source cap option actually requires much more than a 30% reduction in NO_x emissions.

Response

Any cement kilns placed into service on or after December 31, 1999 are included in the source cap to allow a new cement kiln's lower NO_x emission rate to be credited toward the NO_x emission reductions needed by older cement kilns at the same account while still achieving the goal of an overall reduction in NO_x emissions. This in-plant trading between the cement kilns at a cement plant will provide more flexibility so that the owner or operator can evaluate individual units to determine the most cost-effective approach to reduce NO_x emissions. If the cement kilns placed into service on or after December 31, 1999 were not included in the source cap, the goal of an overall 30% reduction in NO_x emissions might not occur because there could be significant growth outside the source cap, as evidenced by Jenkens' comment that cement plants have added approximately three million tons of production capacity since 1996. However, the source cap is only one option for compliance; the other options do not necessarily include the newer kilns (with the exception of the weighted average provision of §117.265(b)).

Section 117.524 (Compliance Schedule for Cement Kilns)

Jenkens supported the proposed revisions to §117.524 and commented that the revisions are necessary to ensure that the affected cement plants are able to comply with the rule.

Response

The commission appreciates the support and has revised §117.524(b) to include a hyphen in the term "low-NO_x burner." In addition, the proposed §117.524(b) specifies that the permit application must be filed "within two months of the effective date of this subsection." The

commission has replaced "within two months of the effective date of this subsection" with the specific date that is two months after the estimated effective date of the revisions, May 30, 2003, in order to make the deadline more apparent when reading the rule language.

Section 117.570 (Use of Emissions Credits for Compliance)

Sierra Club and 38 individuals asked that the commission reconsider its position on emissions trading and stated that emissions trading between one facility and another does not decrease emissions, but instead displaces emissions from one facility to another. Sierra Club and 38 individuals asserted that this is a practice that should cease statewide but especially as it applies to cement kilns. Likewise, Blue Skies Alliance questioned the validity of emissions trading.

Response

The commission believes the banking and trading rules are consistent with its statutory authority to develop a plan for control of the state's air and its authority to issue permits. Banking and other economic incentive programs are also authorized for use in the SIP by 42 USC, §7410(a)(2). The commission disagrees that trading will not result in real reductions. To the extent that it enables the commission to achieve more overall reduction through other rules, the trading program provides a benefit to air quality. Additionally, trading of ERCs and DERCs in many cases requires the retirement of 10% of the credits used to benefit air quality. Trading provides an incentive to reduce emissions since reductions result in ERCs that have market value. The commission further notes that 30 TAC §101.309(d)(3) and 30 TAC §101.378(c)(3) provide for the executive director to halt trading for a certain area if problems result from trading in a localized

area of concern. Finally, NO_x is not generally associated with environmental justice concerns because it does not have the localized impact of volatile organic compounds, especially air toxics. Therefore, the commission has made no changes in response to the comments.

SUBCHAPTER B: COMBUSTION AT MAJOR SOURCES

DIVISION 4: CEMENT KILNS

§§117.260, 117.265, 117.279, 117.283

STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code (TWC), §5.103, which provides the commission the authority to adopt rules necessary to carry out its powers and duties under the TWC; and under Texas Health and Safety Code (THSC), TCAA, §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purposes of the TCAA. The amendments are also adopted under TCAA, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; §382.012, concerning State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air; §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe requirements for owners or operators of sources to make and maintain records of emissions measurements; and §382.051(d), concerning Permitting Authority of Commission; Rules, which authorizes the commission to adopt rules as necessary to comply with changes in federal law or regulations applicable to permits under TCAA, Chapter 382; and FCAA, 42 USC, §7401.

§117.260. 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 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-NO_x 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 (NO_x) 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-NO_x 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 NO_x 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 NO_x 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-precincer kilns.

§117.265. Emission Specifications.

(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 (NO_x) 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 NO_x 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-NO_x burner and either:

(A) mid-kiln firing; or

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

(2) other additions or changes to the kiln system achieving at least a 30% reduction in NO_x 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-NO_x burner or a low-NO_x precalciner is installed and operated during kiln operation is not required to meet the NO_x 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 NO_x emission control requirements of this section, in whole or in part.

§117.279. 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 §117.273 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 (NO_x) 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 NO_x 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.

(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 (NO_x) 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 NO_x 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.

Figure: 30 TAC §117.283(a)

$$\text{NO}_x \text{ 90-day rolling average emission cap (ppd)} = 0.7 \sum_{i=1}^N R_i$$

Where:

- i = Each cement kiln at a single account
- N = The total number of cement kilns at the account
- R_i = The kiln's ozone season daily NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x emissions (in ppd) from all cement kilns in the account's 1996 EI on a 90-day rolling average basis.

(e) The NO_x 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 NO_x emission control requirements of this section, in whole or in part.

SUBCHAPTER E: ADMINISTRATIVE PROVISIONS

§117.524, §117.570

STATUTORY AUTHORITY

The amendments are adopted under TWC, §5.103, which provides the commission the authority to adopt rules necessary to carry out its powers and duties under the TWC; and under THSC, TCAA, §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purposes of the TCAA. The amendments are also adopted under TCAA, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; §382.012, concerning State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air; §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe requirements for owners or operators of sources to make and maintain records of emissions measurements; and §382.051(d), concerning Permitting Authority of Commission; Rules, which authorizes the commission to adopt rules as necessary to comply with changes in federal law or regulations applicable to permits under TCAA, Chapter 382; and FCAA, 42 USC, §7401.

§117.524. Compliance Schedule for Cement Kilns.

(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-NO_x 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.

(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 (NO_x) 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.

Figure: 30 TAC §117.570(d)

$$\Delta E = \left[LA \times (ER_{old} - ER_{new}) \times \frac{d}{2000} \right]$$

Where:

- | | | |
|------------|---|---|
| ΔE | = | the differential of emissions |
| LA | = | the maximum level of activity |
| ER_{old} | = | the existing NO _x emission rate for the affected in lb per unit of activity |
| ER_{new} | = | the new NO _x 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 |