

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Scott
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OCT 08 2012
DIVISION OF AIR
RESOURCE MANAGEMENT

Module AD121

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: CEMEX Construction Materials Florida, LLC	
2. Site Name: Miami Cement Plant	
3. Facility Identification Number: 0250014	
4. Facility Location... Street Address or Other Locator: 1200 NW 137 Avenue City: Miami County: Miami-Dade Zip Code: 33182-1803	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: John B. Koogler, Ph. D, P. E.	
2. Application Contact Mailing Address... Organization/Firm: Koogler and Associates, Inc. Street Address: 4014 NW 13th Street City: Gainesville State: Florida Zip Code: 32609	
3. Application Contact Telephone Numbers... Telephone: (352) 377 - 5822 ext. 18 Fax: (352) 377 - 7158	
4. Application Contact E-mail Address: jkoogler@kooglerassociates.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 10-8-12	3. PSD Number (if applicable):
2. Project Number(s): 0250014-047-A	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application addresses the restatement of the carbon monoxide (CO) emission limit for the kiln system and the use of a Continuous Emission Monitoring System (CEMS) for demonstrating compliance with the CO emission limit. The t project is described in detail in Attachment 1. There are no changes in emissions and no changes in kiln operating time or production associated with this project.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
018	In-Line Kiln, Raw Mill, Clinker Cooler	N/A	N/A

Application Processing Fee

Check one: Attached - Amount: \$ _____ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :	Mr. Luis Lopez, Plant Manager
2. Owner/Authorized Representative Mailing Address...	Organization/Firm: CEMEX Construction Materials Florida, LLC Street Address: 1200 NW 137 Avenue City: Miami State: Florida Zip Code: 33182-1803
3. Owner/Authorized Representative Telephone Numbers...	Telephone: (305) 229 -2962 Fax: (305) 229 -8015
4. Owner/Authorized Representative E-mail Address:	luisguillermo.lopez@cemex.com
5. Owner/Authorized Representative Statement:	<i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>
Signature	Date

Luis G. Lopez
Signature

09/28/2012
Date

APPLICATION INFORMATION

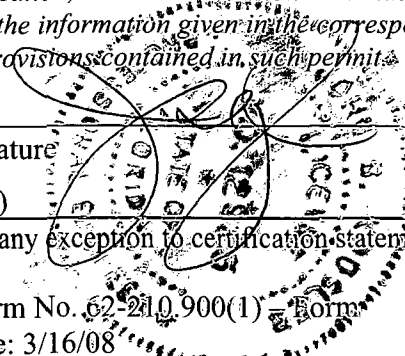
Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: <p style="text-align: center;">NOT APPLICABLE</p>
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone: () ext. Fax: ()
5. Application Responsible Official E-mail Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i> _____ Signature _____ Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: John B. Koogler, Ph. D, P. E. Registration Number: 12925
2. Professional Engineer Mailing Address... Organization/Firm: Koogler and Associates, Inc. Street Address: 4014 NW 13th Street City: Gainesville State: Florida Zip Code: 32609
3. Professional Engineer Telephone Numbers... Telephone: (352) 377-5822 ext.18 Fax: (352) 377-7158
4. Professional Engineer E-mail Address: jkoogler@kooglerassociates.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> (1) <i>To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> (2) <i>To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> (3) <i>If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> if so); I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> (4) <i>If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> (5) <i>If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> Signature _____ Date <u>10/21/2012</u> (seal) 

* Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 558.00 East (km) 2852.15 North (km)		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 25/46/45 Longitude (DD/MM/SS) 80/25/10	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 32	6. Facility SIC(s): 3241
7. Facility Comment : None			

Facility Contact

1. Facility Contact Name: Charles E. Walz - Environmental Manager
2. Facility Contact Mailing Address... Organization/Firm: CEMEX Construction Materials Florida, LLC Street Address: 1200 NW 137th Avenue City: Miami State: Florida Zip Code: 33182
3. Facility Contact Telephone Numbers: Telephone: 305-229-2955 Fax: 305-229-8015
4. Facility Contact E-mail Address: <u>charles.walz@cemex.com</u>

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name: NOT APPLICABLE
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
4. Facility Primary Responsible Official E-mail Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1. <input type="checkbox"/> Small Business Stationary Source	<input checked="" type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	
<p>Facility is subject to applicable portions of: 40 CFR 51, 52, 70, 71 – GHG Tailoring Rule 40 CFR 63 Subpart LLL 40 CFR 60 Subpart F (superseded by NESHAP Subpart LLL) 40 CFR 60 Subpart Y 40 CFR 60 Subpart OOO 40 CFR 241 40 CFR 63 Subpart ZZZZ and 40 CFR 60 Subpart IIII, as applicable. Rules 62-4 through 62-297, F.A.C.</p>	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM	A	N
PM ₁₀	A	N
SO ₂	A	N
NO _x	A	N
CO	A	N
VOC	A	N
HAPs	A	N
D/F	B	N
H114	B	N
SAM	B	N
Pb	B	N

FACILITY INFORMATION

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
NOT APPLICABLE					
7. Facility-Wide or Multi-Unit Emissions Cap Comment:					

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

- | |
|--|
| 1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>w/i 5 yrs.; no change</u> |
| 2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>w/i 5 yrs.; no change</u> |
| 3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>w/i 5 yrs.; no change</u> |

Additional Requirements for Air Construction Permit Applications

- | |
|--|
| 1. Area Map Showing Facility Location:
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility) |
| 2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL):
<input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment 1</u> <input type="checkbox"/> Not Applicable (existing permitted facility) |
| 3. Rule Applicability Analysis:
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility) |
| 4. List of Exempt Emissions Units:
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 5. Fugitive Emissions Identification:
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.):
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.):
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.):
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.):
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
<input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications – NOT APPLICABLE

1. List of Exempt Emissions Units:

Attached, Document ID: _____ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications – NOT APPLICABLE

1. List of Insignificant Activities: (Required for initial/renewal applications only)

Attached, Document ID: _____ Not Applicable

2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)

Attached, Document ID: _____
 Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)

Attached, Document ID: _____

Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)

Attached, Document ID: _____
 Equipment/Activities Onsite but Not Required to be Individually Listed
 Not Applicable

5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)

Attached, Document ID: _____ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:

Attached, Document ID: _____ Not Applicable

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program
- NOT APPLICABLE

<p>1. Acid Rain Program Forms:</p> <p>Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable (not an Acid Rain source)</p> <p>Phase II NO_x Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p> <p>New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>2. CAIR Part (DEP Form No. 62-210.900(1)(b)):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable (not a CAIR source)</p>
<p>3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable (not a Hg Budget unit)</p>

Additional Requirements Comment

No additional comments

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which have at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

In-Line Kiln, Raw Mill, Clinker Cooler

3. Emissions Unit Identification Number: **018**

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: 9/30/2000	7. Emissions Unit Major Group SIC Code: 32
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8. Federal Program Applicability: (Check all that apply) **N/A**

Acid Rain Unit

CAIR Unit

Hg Budget Unit

9. Package Unit:
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment: **This project will not increase emissions, kiln capacity or kiln operating hours. Project details:**

1) Restate CO emission Limit and require CO CEMS for compliance

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:

Baghouse – High Temperature

2. Control Device or Method Code: **016**

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
267 TPH dry preheater feed and fly ash (maximum hourly feed rate to the preheater);	
247 TPH dry preheater feed and fly ash (annual average hourly feed rate to the preheater)	
2. Maximum Production Rate:	
162 TPH, maximum hourly, and 1,300,000 TPY clinker (consecutive 12-month period)	
3. Maximum Heat Input Rate: 485 million Btu/hr. (pyroprocessing system)	
4. Maximum Incineration Rate: pounds/hr	
tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment:	
Based on Permit No. 0250014-044-AV.	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: Kiln		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Equipment ID 331.BF300			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V	6. Stack Height: 359 feet	7. Exit Diameter: 11.0 feet	
8. Exit Temperature: 225°F.	9. Actual Volumetric Flow Rate: 339,000 acfm	10. Water Vapor: 12 %	
11. Maximum Dry Standard Flow Rate: 230,000 dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Common baghouse for kiln, raw mill, and clinker cooler. Temperature and Flow Rate based on Raw Mill operating.			

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Raw Material Grinding and Drying – Raw Mill		
2. Source Classification Code (SCC): 3-05-006-13		3. SCC Units: Tons Processed
4. Maximum Hourly Rate: 267	5. Maximum Annual Rate: 2,338,920	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: The preheater dry feed rate shall not exceed 267 tons per hour (TPH- 1 hr. maximum). The clinker production rate of the kiln shall not exceed 162 tons per hour (TPH- 1 hr. maximum) and 1,300,000 tons during any consecutive 12 months. Annual rate is based on the maximum hourly rate and 8,760 hr/yr.		

Segment Description and Rate: Segment 2 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln		
2. Source Classification Code (SCC): 3-05-006-22		3. SCC Units: Tons Processed
4. Maximum Hourly Rate: 267	5. Maximum Annual Rate: 2,338,920	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: The preheater dry feed rate shall not exceed 267 tons per hour (TPH- 1 hr. maximum). The clinker production rate of the kiln shall not exceed 162 tons per hour (TPH- 1 hr. maximum) and 1,300,000 tons during any consecutive 12 months. Annual rate is based on the maximum hourly rate and 8,760 hr/yr.		

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 3 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Clinker Cooler		
2. Source Classification Code (SCC): 3-05-006-14		3. SCC Units: Tons Processed
4. Maximum Hourly Rate: 162	5. Maximum Annual Rate: 1,300,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: The preheater dry feed rate shall not exceed 267 tons per hour (TPH- 1 hr. maximum). The clinker production rate of the kiln shall not exceed 162 tons per hour (TPH- 1 hr. maximum) and 1,300,000 tons during any consecutive 12 months. Annual rate is based on the maximum hourly rate and 8,760 hr/yr.		

Segment Description and Rate: Segment 4 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Natural Gas; Cement Kiln/Dryer – Kiln and Precalciner		
2. Source Classification Code (SCC): 3-90-006-02		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 0.46	5. Maximum Annual Rate: 4,046.3	6. Estimated Annual Activity Factor:
7. Typical % Sulfur: Negligible	8. Typical % Ash: Negligible	9. Million Btu per SCC Unit: 1,050
10. Segment Comment: Maximum rates are based on heat input rate of 485 MMBtu/hr and heat content of 1,050 MMBtu/MMcf.		

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 5 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Coke; General: Coke		
2. Source Classification Code (SCC): 3-90-008-99		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 16.3	5. Maximum Annual Rate: 142,788	6. Estimated Annual Activity Factor:
7. Typical % Sulfur: 0.5-1.0	8. Typical % Ash: 0.5-5.0	9. Million Btu per SCC Unit: 26.6
10. Segment Comment: Hourly rate (24-hr avg.) based on Permit No. 0250014-044-AV. Annual rate based on the hourly rate and 8,760 hr/yr. Typical % sulfur, % ash, and MMBtu/ton burned based on AP-42 Appendix A.		

Segment Description and Rate: Segment 6 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Coal; Cement Kiln Dryer		
2. Source Classification Code (SCC): 3-90-002-01		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 18.7	5. Maximum Annual Rate: 163,812	6. Estimated Annual Activity Factor:
7. Typical % Sulfur: 0.7	8. Typical % Ash: 7.9	9. Million Btu per SCC Unit: 26.0
10. Segment Comment: Annual rate is based on the maximum hourly rate and 8,760 hr/yr. Typical % sulfur, % ash, and MMBtu/ton burned based on average actual fuel analysis data.		

EMISSIONS UNIT INFORMATION

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 7 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Distillate Oil; Cement Kiln/Dryer – No. 2 Fuel Oil		
2. Source Classification Code (SCC): 3-90-005-02		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 3.46	5. Maximum Annual Rate: 31,536	6. Estimated Annual Activity Factor:
7. Typical % Sulfur: 0.2-1.0	8. Maximum % Ash: negligible	9. Million Btu per SCC Unit: 140
10. Segment Comment: Based on 485 MMBtu/hr and heat content of 140,000 Btu/gal. Typical % sulfur, % ash, and MMBtu/1,000 gallons burned based on AP-42 Appendix A.		

Segment Description and Rate: Segment 8 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Liquid Waste – On-Spec. and Off-Spec. Used Oil and Oily Wastewater in Kiln and Precalciner		
2. Source Classification Code (SCC): 3-90-013-89		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 3.34	5. Maximum Annual Rate: 31,886	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.2-4.0	8. Maximum % Ash: 0.05-0.1	9. Million Btu per SCC Unit: 145
10. Segment Comment: Maximum rates are based on heat input rate of 485 MMBtu/hr and heat content of 145,000 Btu/gal. Annual rate based on Permit No. 0250014-044-AV. Typical % sulfur, % ash, and MMBtu/ton burned based on AP-42 Appendix A.		

EMISSIONS UNIT INFORMATION

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)**Segment Description and Rate: Segment 9 of 14**

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Residual Oil; Cement Kiln/Dryer – Kiln and Precalciner			
2. Source Classification Code (SCC): 3-90-004-02		3. SCC Units: 1,000 Gallons Burned	
4. Maximum Hourly Rate: 3.23	5. Maximum Annual Rate: 28,324	6. Estimated Annual Activity Factor:	
7. Typical % Sulfur: 0.5-4.0	8. Typical % Ash: 0.05-0.1	9. Million Btu per SCC Unit: 150	
10. Segment Comment: Maximum rates are based on heat input rate of 485 MMBtu/hr and heat content of 150,000 Btu/gal. Typical % sulfur, % ash, and MMBtu/1,000 gallons burned based on AP-42 Appendix A.			

Segment Description and Rate: Segment 10 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Solid Waste; General – Paper Currency			
2. Source Classification Code (SCC): 3-90-012-99		3. SCC Units: Tons Burned	
4. Maximum Hourly Rate: 0.23	5. Maximum Annual Rate: 2,000	6. Estimated Annual Activity Factor:	
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:	
10. Segment Comment: Hourly rate is based on the maximum annual rate and 8,760 hr/yr.			

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 11 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Liquified Petroleum Gas; General		
2. Source Classification Code (SCC): 3-90-010-99		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 5.2	5. Maximum Annual Rate: 45,197	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: negligible	8. Maximum % Ash: negligible	9. Million Btu per SCC Unit: 94
10. Segment Comment: Maximum rates are based on heat input rate of 485 MMBtu/hr and heat content of 94,000 Btu/gal.		

Segment Description and Rate: Segment 12 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Solid Waste; General – Fly Ash		
2. Source Classification Code (SCC): 3-90-012-99		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 35	5. Maximum Annual Rate: 306,600	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: Annual rate is based on the maximum hourly rate and 8,760 hr/yr.		

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 13 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Alternative Fuel; Whole Tires (TDF)		
2. Source Classification Code (SCC): 3-90-012-99		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 2.5	5. Maximum Annual Rate: 21,900	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 28
10. Segment Comment: Annual rate based on hourly rate and 8,760 hr/yr.		

Segment Description and Rate: Segment 14 of 14

1. Segment Description (Process/Fuel Type): Industrial Processes; In-Process Fuel Use; Alternative Fuels – Kiln and Precalciner		
2. Source Classification Code (SCC): 3-90-012-89		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: See 0250014-045-AC	5. Maximum Annual Rate: See 0250014-045-AC	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: See 0250014-045-AC	8. Maximum % Ash:	9. Million Btu per SCC Unit: See 0250014-045-AC
10. Segment Comment: Segment represent non-hazardous alternative fuels: See 0250014-045-AC for list of fuels.		

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	016		EL
PM ₁₀	016		EL
PM _{2.5}			EL
SO ₂	041		EL
NO _x	025		EL
CO	025		EL
VOC			EL
SAM			EL
H114			EL
PB			EL
D/F			EL

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 40.6 lb/hour 163 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): N/A			
6. Emission Factor: 0.152 lb/ton of kiln feed Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.152 lb/ton kiln preheater feed	4. Equivalent Allowable Emissions: 40.6 lb/hour 163 tons/year
5. Method of Compliance: EPA Method 5 or 201/201A initially and annually; 3x 1 hour	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.10 lb/ton of kiln feed	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV and 40 CFR 63.1345 (Clinker Cooler Limit)	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM₁₀		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 32.3 lb/hour 130 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 0.121 lb/ton of kiln feed Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.121 lb/ton of kiln feed	4. Equivalent Allowable Emissions: 32.3 lb/hour 130 tons/year
5. Method of Compliance: Annual compliance testing using EPA Method 5 or 201/201A.	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM_{2.5}		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 20.3 lb/hour 81.5 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 0.076 lb/ton of kiln feed Reference: Permit No. 0250014-044-AV and 0250014-045-AC		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: PM_{2.5} emission factors estimated at 50% of PM. See 0250014-045-AC			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SO₂		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 81.0 lb/hour 325 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 0.50 lb/ton clinker Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.50 lb/ton clinker	4. Equivalent Allowable Emissions: 81.0 lb/hour 325 tons/year
5. Method of Compliance: Continuous Emissions Monitoring	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NO_x		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 648 lb/hour 2,600 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 4.0 lb/ton of clinker Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 3

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 4.0 lb/ton clinker	4. Equivalent Allowable Emissions: 648 lb/hour 2,600 tons/year
5. Method of Compliance: Continuous Emissions Monitoring	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 455 lb/hour 1,827 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 2.81 lb/ton clinker Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
<p>10. Calculation of Emissions: The annual CO emission limit was set at 1827 tpy by permit 0250014-016-AC (issued 12/2004) to avoid PSD. The emission factor for CO (2.81 lb/ton clk) is based on the annual CO emission rate and an annual clinker production limit of 1.3 mmtpy. Compliance with the CO emission limit has been demonstrated annually by three 1-hour test runs (EPA Method 10) and reasonable assurance has been provided by process monitors (See Attachment 1).</p> <p>CEMEX is proposing to keep the permitted CO emission limits, but to have the averaging time for the emission limit set as a 30-day rolling average limit and to have compliance demonstrated by a CEMS. The rationale for this request is set forth in Attachment 1.</p>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 2.81 lb/ton clinker	4. Equivalent Allowable Emissions: 455 lb/hour 1,872 tons/year
5. Method of Compliance: CEMEX is proposing compliance demonstration by CEMS	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 19.4 lb/hour 78 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 0.12 lb/ton clinker Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.12 lb/ton clinker	4. Equivalent Allowable Emissions: 19.4 lb/hour 78 tons/year
5. Method of Compliance: EPA Method 25A initially and annually; 3x 1 hour / CEMs Monitoring (only for reasonable assurance)	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

EMISSIONS UNIT INFORMATION
 Section [1] of [1]
 In-Line Kiln, Raw Mill, Clinker Cooler

POLLUTANT DETAIL INFORMATION
 Page [8] of [11]
 H₂SO₄ (mist)

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SAM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3.24 lb/hour 13.0 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 0.020 lb/ton clinker Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION
Section [1] of [1]
In-Line Kiln, Raw Mill, Clinker Cooler

POLLUTANT DETAIL INFORMATION
Page [8] of [11]
H₂SO₄ (mist)

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.020 lb/ton clinker	4. Equivalent Allowable Emissions: 3.24 lb/hour 13.0 tons/year
5. Method of Compliance: EPA Method 8 (once per renewal); 3x 1 hour	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: H114 (Mercury)		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.023 lb/hour 0.091 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 1.4×10^{-4} lb/ton of clinker Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment: Annual limit of 182 lb/yr based on 0.091 ton/yr.			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.4×10^{-4} lb/ton of clinker	4. Equivalent Allowable Emissions: 0.023 lb/hour 0.091 tons/year
5. Method of Compliance: EPA Method 29 Annually; 3x 1 hour / Material Balance	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Lead		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.049 lb/hour 0.195 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 3.0 x 10⁻⁶ lb/ton of clinker Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment: Permit limit of 0.195 ton/yr = 390 lb/yr . This value is below PSD threshold of 1200 lb/yr.			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 3.0 x 10⁻⁶ lb/ton of clinker	4. Equivalent Allowable Emissions: 0.049 lb/hour 0.195 tons/year
5. Method of Compliance: EPA Method 29 (once prior to permit renewal); 3x 1 hour	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Dioxin/Furans		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): tons/year			
6. Emission Factor: 0.20 ng/dscm TEQ or 0.40 ng/dscm TEQ (T<204°C) at 7% O₂ Reference: Permit No. 0250014-044-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.20 ng/dscm @ 7% O₂ (T ≥ 204°C)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 23 Initially and every 30 months; 3x 1 hour	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV and 40 CFR 63.1343(b)(3)(i). Concentration based standard.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.40 ng/dscm @ 7% O₂ (T < 204°C)	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: EPA Method 23 Initially and every 30 months; 3 x 3-hour runs	
6. Allowable Emissions Comment (Description of Operating Method): Based on Permit No. 0250014-044-AV and 40 CFR 63.1343(b)(3)(ii). Concentration based standard.	

EMISSIONS UNIT INFORMATION

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Method 9 annually; 1 hour / COMS	
5. Visible Emissions Comment: Based on Permit No. 0250014-044-AV and 40 CFR 63.1345(a)(2). Applies to the Clinker Cooler.	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Continuous opacity monitor	
5. Visible Emissions Comment: Based on 40 CFR 63.1343(b)(2). Applies to the In-Line Kiln/Raw Mill.	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 6

1. Parameter Code: EM	2. Pollutant(s): CO
3. CMS Requirement: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: CEMEX is proposing to install a CO CEMS and to use the CEMS for demonstrating compliance with the proposed CO emission limit of 2.81 lb/ton clk, 30-day rolling average.	

Continuous Monitoring System: Continuous Monitor 2 of 6

1. Parameter Code: EM	2. Pollutant(s): SO2
3. CMS Requirement: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Based on Permit No. 0250014-044-AV.	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 3 of 6

1. Parameter Code: VE	2. Pollutant(s):
3. CMS Requirement: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Based on Permit No. 0250014-044-AV, 40 CFR 63.1343(b)(2), and 40 CFR 63.1345(a)(2).	

Continuous Monitoring System: Continuous Monitor 4 of 6

1. Parameter Code: EM	2. Pollutant(s): THC
3. CMS Requirement: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Based on Permit No. 0250014-044-AV. Monitor total hydrocarbon (THC) emissions from the kiln/raw mill/cooler stack. Reasonable assurance, not for compliance.	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 5 of 6

1. Parameter Code: EM	2. Pollutant(s): NOX
3. CMS Requirement: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Based on Permit No. 0250014-044-AV	

Continuous Monitoring System: Continuous Monitor 6 of 6

1. Parameter Code: EM	2. Pollutant(s): CO2
3. CMS Requirement: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Based on 40 CFR 98. Use for CO₂ monitor.	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

In-Line Kiln, Raw Mill, Clinker Cooler

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

<p>1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: <input checked="" type="checkbox"/> Previously Submitted, Date <u>w/i 5 years; no change</u></p>
<p>2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: <input type="checkbox"/> Previously Submitted, Date <u>N/A</u></p>
<p>3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date <u>On file with DEP</u></p>
<p>4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID _____ <input type="checkbox"/> Previously Submitted, Date _____</p> <p><input checked="" type="checkbox"/> Not Applicable (construction application)</p>
<p>5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>On file with DEP</u></p> <p><input type="checkbox"/> Not Applicable</p>
<p>6. Compliance Demonstration Reports/Records:</p> <p><input type="checkbox"/> Attached, Document ID: _____</p> <p>Test Date(s)/Pollutant(s) Tested: _____</p> <p><input type="checkbox"/> Previously Submitted, Date: _____</p> <p>Test Date(s)/Pollutant(s) Tested: _____</p> <p><input type="checkbox"/> To be Submitted, Date (if known): _____</p> <p>Test Date(s)/Pollutant(s) Tested: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p> <p>Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.</p>
<p>7. Other Information Required by Rule or Statute:</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable</p>

ATTACHMENT 1
PROJECT DESCRIPTION

INTRODUCTION

This application addresses the restatement of the carbon monoxide (CO) emission limiting standard for the kiln system of the CEMEX Miami Cement Plant (the kiln, raw mill and clinker cooler) to establish a 30-day rolling averaging time for the emission limit. This project is described in the following sections.

CO EMISSION LIMIT

The carbon monoxide (CO) emission limit for the kiln system (the kiln, raw mill and clinker cooler) of the CEMEX Miami Cement Plant is currently 2.81 pounds per ton of clinker, 455 pounds per hour and 1,827 tons per year (Permit 0250014-044-AV). Compliance with these emission limiting standards is demonstrated annually by three 1-hour test runs conducted in accordance with EPA Method 10 (condition B.21.). The permit explicitly states that compliance is not to be demonstrated by Continuous Monitoring Systems (CMS) however, footnote [5] to Condition B.21 states:

Continuous process monitors for CO and/or O₂ to optimize combustion conditions for pollution control shall be part of the process.

Further in the permit, at Condition B.24 - *Carbon Monoxide (CO) Monitoring*, it is stated:

a. Continuous Monitoring: Continuous monitors shall be installed for CO or O₂ to ensure proper combustion practices and for use in determining plant operating parameters to optimize emissions of CO, NO_x and SO₂.

b. CO Process Alarm: The permittee shall add a control room alarm to the existing CO process monitor [located in the upper section of the downcomer from the preheater] to alert operators of elevated CO emissions. The alarm shall be set to activate when the process monitor records CO emissions of 1200 ppmv or more. When the alarm occurs, operators shall take appropriate corrective actions to return CO emissions below the alarm set point.

[Clarification added]

The averaging times associated with the current CO emission limit and the CO alarm set point are effectively 3-hours and instantaneous, respectively.

By this application, CEMEX is requesting that the CO emission limit remains unchanged at 2.81 pounds per ton of clinker, 455 pounds per hour and 1827 tons per year but that the averaging time for demonstrating compliance be changed to a 30-day rolling average with compliance demonstrated by a Continuous Emission Monitoring System (CEMS).

The reason for this request is the inherent variability of CO emissions from a modern dry process Portland cement plant and the difficulty of operating the plant normally without triggering the CO process monitor alarm at the set point of 1200 ppmv. In the following sections, the history of the current CO emission limiting standards will be reviewed, the variability of CO emissions from dry process Portland cement plants operating in Florida will be documented and the precedent that FDEP has established in setting CO emission limits for recently permitted Portland cement plants will be documented.

CO Emission Limit Background

In September 1997, FDEP issued Permit No. 0250014-002-AC to the Rinker Materials Corporation (Rinker) for the modernization of the Miami Cement Plant. Rinker, the owner of the plant at that time, was authorized by the permit to construct a 1.2 million ton per year (clinker) dry process cement plant to replace a wet-process plant with multiple kilns. The modernized plant was to have a single preheater/calcliner kiln with a permitted hourly clinker production rate of 137 tons per hour. The CO emission limit established for the kiln system was 3.01 pounds per ton of clinker, 412 pounds per hour and 1807 tons per year. The 1807 ton per year CO emission rate represented an approximate 58 ton per year increase in CO emissions over baseline emissions from the wet-process kilns. With this increase, PSD was not triggered as the PSD significant emission rate increase for CO was, and still is, 100 tons per year.

In the Technical Evaluation and Preliminary Determination (TEPD) for the project (dated June 23, 1997) the discussion of the CO emission limit and monitoring requirements include the following statement:

CO emission limit of 3.01 pounds per ton of clinker will be accomplished through good combustion controls. Rinker will install process monitors to continuously monitor carbon monoxide for both safety and optimization of operations. These measures, together with the NO_x and SO₂ CEMS units will allow Rinker to incorporate good combustion practices into its operations and maintenance procedures.

Consistent with that discussion, the permit (-002-AC) at Condition B.9. stated:

Continuous process monitors shall be installed for CO or O₂ to ensure proper combustion practices and for use in determining plant operating parameters to optimize emissions of CO, NO_x and SO₂.

The permit at Table 2-1 also specifies that compliance was to be demonstrated initially and annually by three 1-hour test runs tested conducted in accordance with EPA Method 10. It should be noted that when Permit -002-AC was issued in 1997, it was typical for the Department to require continuous emission monitoring for compliance only for SO₂ and NO_x, and to have CO and THC/VOC compliance demonstrated by annual compliance testing.

In December 2004, Rinker was issued Permit 0250014-016-AC to increase the production rate of the plant from 1.2 to 1.3 million tons per year of clinker. To achieve this rate increase without triggering PSD, the annual mass emission rates of CO and other pollutants remained essentially unchanged but the emission rates in units of pounds per tons of clinker were reduced. Specifically for CO, the annual emission rate was increased from 1807 to 1827 tons per year and the emission rate as a function of clinker production was reduced to 2.81 pounds per ton of clinker. The 20 ton per year CO increase, when combined with the increase associated with Permit -002-AC, resulted in an annual CO emission increase of 78 tons per year above the wet-process plant baseline; an increase still below the 100 ton per year CO threshold for triggering PSD.

The other CO emission limits established by Permit -016-AC were 2.81 pounds per ton of clinker and 455 pounds per hour, maximum 1-hour average. The maximum clinker production rate

established by this permit was 162 tons per hour (1-hour maximum) and 148 tons per hour, average. Compliance with these revised emission limiting standards was still to be demonstrated annually by three 1-hour test runs conducted in accordance with EPA Method 10.

In addition to this compliance requirement, a condition was added to establish a more rigorous CO process monitoring requirement. At Condition 3 of Permit -016-AC, the CO monitoring requirement now included the following:

CO Process Alarm: The permittee shall add a control room alarm to the existing CO emissions process monitor to alert operators of elevated CO emissions. The alarm shall be set to activate when the process monitor records CO emissions of 1200 ppmv or more. When an alarm occurs, operators shall take appropriate corrective actions to return CO emissions below the alarm set point....

The 1200 ppmv alarm limit for CO was, and is, measured by a process monitor at the top of the downcomer (where kiln combustion gases exit the preheater). This limit was based on correspondence between the Department and Rinker. Rinker provided information that was cited in the TEPD for Permit -016-AC:

Before entering the main stack, this gas stream [the gas stream exiting the preheater where the CO process monitor is located] mixes with the [clinker] cooler vent gases as well as ambient air from various fresh air dampers. As a result, the CO concentration in the main stack is significantly lower than in the downcomer. Although there is no precise calculation relating downcomer CO and main stack CO [concentrations], alarm points on downcomer CO could be installed to alert the operator that CO emissions are near the limit [emission limit] and that action is needed to correct the situation.

[Clarification added]

Based on this dialogue, the Department opinioned in the Final Determination for Permit -016-AC:

The relationship is still strong enough such that the use of the downcomer CO process monitor in conjunction with the alarm and the margin of safety in the set

point will provide reasonable assurance, though not certainty, of compliance with the permitted CO limitation The Department does not believe in-stack CEMS for CO is required for this production increase. The process monitor and alarm will add to the level of compliance assurance provided by the required stack testing [the required annual compliance test].....

[Clarification added]

The production limit of the kiln and the CO compliance and monitoring requirements established by Permit 0250014-016-AC remain in effect at this time and were most recently codified by Permit 0250014-044-AV; issued in March 2012.

Plant Operations

Rinker, and then CEMEX beginning in 2007, has operated the plant with the CO emission limiting standards and monitoring requirements summarized in the preceding section. Operating the plant within the confines of the 1200 ppmv process monitor alarm set point has been difficult however; and without a sound basis as there has never been a direct relationship developed between the CO monitor alarm set point (1200 ppmv) and the CO emission rate from the kiln system stack (2.81 lb/ton clinker). The operational difficulties arise because of the inherent variability in CO emissions from dry process Portland cement plants and from the fact that the alarm set point represents a very short-term averaging time for the CO concentration measurements.

The variability in CO emissions from dry process Portland cement plants is demonstrated by the data presented in Figure 1. In this figure, CO emission data representing one month periods from five Florida dry process Portland kilns are presented. The data presented are 3-hour average CO concentrations adjusted to a mean (average) concentration of 500 ppmv. This concentration represents a concentration in the range of, but somewhat lower than the average CO concentration in the downcomer of the CEMEX Miami cement plant.

In reviewing the data, it will be noted that even with these data representing 3-hour averaging periods, there are multiple occasions during a one month period when the CO concentration of

1200 ppmv is exceeded. Using a statistical approach developed by Larsen¹, it was estimated that a six-minute average CO concentrations (a very short-term average concentration that could trigger the CO process monitor alarm) corresponding to the data in Figure 1 would be approximately 2.5 times greater than the 3-hour averages concentrations. Thus, the number of occasions when the CO alarm might be triggered is considerably greater than represented by data in Figure 1.

Because of the inherent variability in CO emissions from dry process Portland cement plants and the difficulty of operating within the confines of the very short averaging time of the 1200 ppmv alarm set point, CEMEX is requesting, consistent with recently permitted cement plants in Florida, a 30-day average CO emission limit with compliance demonstrated by CEMS. It should be noted that this averaging time (30-days) is also the averaging time EPA selected for the SO₂ and NO_x New Source Performance Standards (NSPS) adopted for Portland cement plants in 2010; so the requested 30-day averaging time is not without precedent.

Further supporting this request are the data presented in Figures 2 and 3; both representing data from a modern Florida preheater/calcliner Portland cement plant. The data represent CO emissions from over 2,000 hours of operating time. The data have been adjusted to represent what typical CO emission data from the CEMEX Miami cement plant might look like with the kiln system operating in compliance with a 30-day average CO emission standard of 2.81 pounds per ton of clinker.

In Figure 2, 3-hour and 30-day average CO emission rates are shown chronologically for 2,000+ hours of plant operating time. The data show that the average CO emission rate for both the 3-hour average data set and the 30-day data set is 2.37 pounds of CO per ton of clinker. The data also show that the maximum 30-day rolling average CO emission rate approaches the CEMEX Miami plant CO emission limit of 2.81 pounds per ton of clinker. The range for the 30-day rolling average CO emission rates is 2.0 - 2.8 pounds per ton of clinker.

¹ Larsen, R.I., et al., *Analyzing Air Pollutant Concentration and Dosage Data*, Journal of APCA [now AWMA], Volume 17, No. 2, February 1967

In contrast, the 3-hour average CO emission data show a range from approximately 1.4 - 22.4 pounds of CO per ton of clinker; again with the average of 2.37 pounds per ton of clinker. These data again demonstrate the inherent variability of short-term CO emissions from modern dry process Portland cement plants. And as stated earlier, very short-term CO emission rates (typical of those that could trigger the 1200 ppmv CO process monitor alarm) can be up to 2.5 times greater than the 3-hour CO emission rates.

Table 3 presents the data from Table 2 in a statistical format. To prepare this figure, the 3-hour, 24-hour and 30-day CO emission rates were ranked from highest to lowest and are plotted against their frequencies of occurrence. From these data, it can be seen that the maximum 30-day CO emission rate approaches the CEMEX Miami CO emission limit of 2.81 pounds per ton of clinker (as shown in Figure 2). On the other hand, the data show that both the 3-hour and 24-hour average CO emission rates exceed the limit of 2.81 lb/ton clinker approximately 18 and 21 percent of the time, respectively. The maximum 3-hour CO emission rate is ~22 pounds per ton of clinker while the maximum 24-hour CO emission rate is ~4.8 pounds per hour. Again, these shorter term average exceedances are the result of the inherent variability of CO emissions from modern dry process Portland cement plants.

Proposed Carbon Monoxide Emission Limit

As stated previously, CEMEX is requesting that the carbon monoxide emission limit for the Miami Cement Plant remain at 2.81 pounds per ton of clinker, but with a rolling 30-day averaging time and with compliance demonstrated by CEMS. The 2.81 pounds per ton of clinker in conjunction with the 1.3 million tons of clinker that the plant is permitted to produce results in a potential annual CO emission rate of 1,827 tons per year. This is the currently permitted annual CO emission limit for the plant.

The annual CO emission limit for the plant was established by Permit 0250014-002-AC issued in September, 1997 and Permit 0250014-016-AC issued in December, 2004. In both cases, the annual emission limit (1827 tons of CO per year) was set to keep the annual CO emissions increase below 100 tons per year; thus avoiding PSD. The current annual limit represented an approximate 78 ton per year increase in CO emission above the base line for the wet-process

plant. When establishing the emission limits, the short-term CO limits (pounds per hour and pounds per ton of clinker) were derived from the annual limit; they were never the determining limits.

The Department has recognized the variability of CO emissions from cement plants as evidenced by the CO emission limit contained in Permit 1190042-001-AC issued to the American Cement Company in February 2006. The CO emission limit in the American Cement permit is 2.9 pounds per ton of clinker, 30-day rolling average. EPA has also recognized variability in Portland cement plant emissions by setting the averaging times for recently (September 2010) adopted NSPS for SO₂ and NO_x at 30 days.

CEMEX is requesting a CO emission limit with the same averaging time for their Miami Cement Plant as it will improve operations of the plant and monitoring will be a measure of actual CO emissions that can be used for compliance demonstration on a continuous basis (not the monitoring of a parameter with no direct correlation to stack CO emissions). Furthermore, converting the CO emission limit from an effective 3-hour average emission limit with compliance demonstration by three 1-hour runs in accordance with EPA Method 10 and with reasonable assurance provided by a CO process monitor with an alarm limit to a 30-day average emission rate with no increase in annual emissions, will not affect the production rate of the plant, it will not affect CO emissions from the plant and it will recognize the inherent operating characteristics of dry process Portland cement plants.

Figure 1
VARIABILITY OF 3-HOUR AVERAGE CO EMISSIONS FROM DRY-PROCESS
FLORIDA CEMENT PLANTS



Figure 2
3-hour and 30-day CO Emissions from Typical Preheater/Calciner Cement Plant

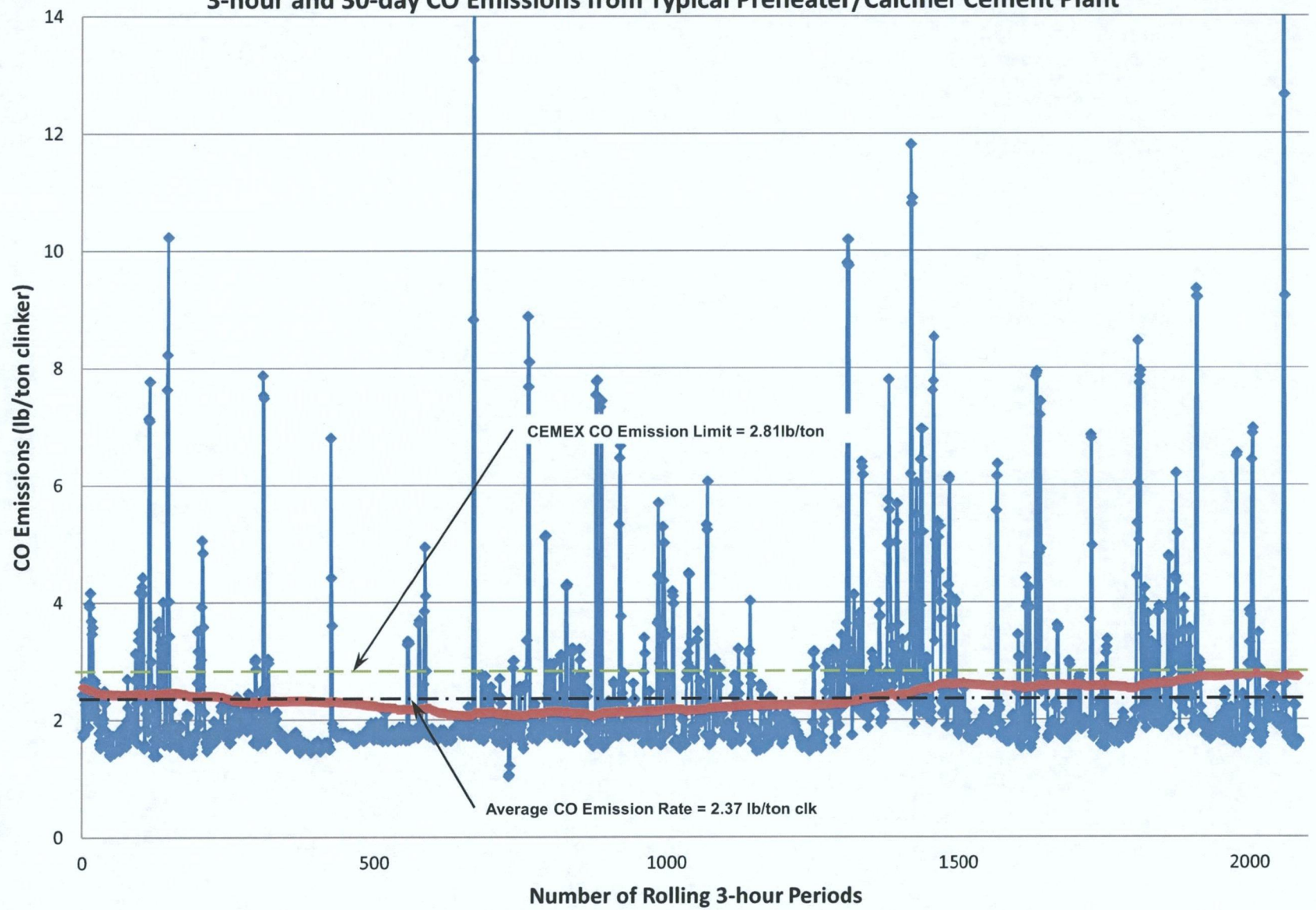


Figure 3
CO Emission Rate (lb/ton clinker) as a Function of Averaging Time
(2000+ Hour Period at Typical Preheater/Calciner Cement Plant)

