Dragon Products Company, LLC
Knox County
Thomaston, Maine
A-326-77-2-A

Departmental
Findings of Fact and Order
New Source Review
NSR #4

FINDINGS OF FACT

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Dragon Products Company, LLC (Dragon)
LICENSE TYPE	06-096 CMR 115, Minor Modification
NAICS CODES	32731
NATURE OF BUSINESS	Cement Manufacturing
FACILITY LOCATION	US Route 1, Thomaston, Maine

Dragon manufactures portland cement using a dry process consisting of equipment used for kiln feed preparation, clinker production, and finish cement operations. The facility is considered an existing Part 70 Major Source as defined in Definitions Regulations, 06-096 CMR 100 (as amended) and operates under a Part 70 license and associated amendments.

B. Amendment Description

The minor modification application submitted by Dragon is for the addition of carbon monoxide (CO) emission limits based on emissions of CO per ton of clinker produced and emissions of CO in lb/hr during periods of startup, shutdown, and malfunctions. These limits will supplement the existing CO emission limits. The proposed CO emission limit was based on negotiations with the United States Environmental Protection Agency (EPA) and Dragon as part of a federal settlement reached in August 2008 based on a Notice of Violation dated August 24, 2007. A clarification of the definition of the facility's kiln startup and startup end time was also agreed upon by Dragon and EPA. As part of the settlement process, Dragon submitted the proposed emission limits of CO lb/ton of clinker produced; CO lb/hr during startup, shutdown, and malfunction; and the revised startup definition as an amendment to the air emission

license. However, since the submittal of the application, 40 CFR Part 63, Subpart LLL, *National Emission Standards for Hazardous Air Pollutants form the Portland Cement Manufacturing Industry* was revised and includes definitions of startup and shutdown. To be consistent with the federal rules, the startup and shutdown definitions from 40 CFR Part 63, Subpart LLL are incorporated in this license.

C. Emission Equipment

The existing, licensed cement kiln with a nominal capacity of 440.0 MMBtu/hr is addressed in this air emission license. The kiln is currently licensed to fire coal, petroleum coke, #2 and #4 fuel oil, specification and non-specification waste oil, polypropylene/polyester fiber material, and whole tires or tire chips.

D. Application Classification

The application submitted by Dragon for an additional CO emission limit and clarification on the kiln startup definition does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing or record keeping. License allowed emissions are not increasing and no new equipment is being added.

This amendment has been classified as a minor modification under *Minor and Major Source Air Emission License Regulations* 06-096 CMR 115 (as amended). The minor modification was processed simultaneously with the renewal of the Part 70 air emission license and is incorporated in A-326-70-E-R/A.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. CO Emission Limit

Dragon has proposed an additional CO emissions limit from the kiln stack as CO pounds per ton of clinker produced. Dragon was required to submit the proposed CO emission limit as part of negotiations with EPA prior to a finalized settlement on August 2008.

During the process of concurring on the CO lb/tons of clinker produced emission limit and CO lb/hr emission limit during startup, shutdown, and malfunction, EPA and Dragon also agreed upon a definition of kiln startup and startup end time, revised from that found in the facility's Startup, Shutdown, and Malfunction plan. The startup definition was proposed as 'Startup of the kiln system begins when the appropriate kiln system preheat schedule is initiated. Startup ends (i) when a kiln feed rate of one hundred (100) tons per hour is maintained for at least one hour, or (ii) two hours after feed is introduced into the kiln, whichever first occurs.' As noted, 40 CFR Part 63, Subpart LLL was revised after the amendment application was submitted and the federal rule includes the following definitions in §63.1341:

> *Startup* means the time from when a shutdown kiln first begins firing fuel until it begins producing clinker. Startup begins when a shutdown kiln turns on the induced draft fan and begins firing fuel in the main burner. Startup ends when feed is being continuously introduced into the kiln for at least 120 minutes or when the feed rate exceeds 60 percent of the kiln design limitation rate, whichever occurs first.
>
> *Shutdown* means the cessation of kiln operation. Shutdown begins when feed to the kiln is halted and ends when continuous kiln rotation ceases.

This amendment formalizes the kiln startup definition from 40 CFR Part 63, Subpart LLL as part of the CO emission limit calculation condition.

Dragon shall comply with the following additional CO emission limits from the kiln stack:

Pollutant	Emission Limit	Units	Averaging Time	Operations
CO	2.6	lb/ton of clinker produced	30-operating day rolling average	Normal
	3.2	lb/ton of clinker produced	30-operating day rolling average	During usage of permitted alternative fuels
	500.0	lb/hr	2-hr average	Startup, Shutdown, and Malfunction

- Emissions of CO shall not exceed Q, expressed as lb CO/ton clinker on a 30-operating day rolling average, when firing permitted alternative fuels:

$$Q = [L1 * C] + [L2 * PAF]$$

Where:

L1 = 2.6 lb CO/ton clinker
L2 = 3.2 lb CO/ton clinker
C = % (decimal or fraction less than 1) of BTUs input during the 30-day period from coal, pet coke and other fuels that are not considered to be permitted alternative fuels.; c=1-PAF.
PAF = % (decimal or fraction less than 1) of BTUs input during the 30-day period from the combustion of permitted alternative fuels. Permitted alternative fuels and raw materials are only those which would be expected to increase CO emissions, such as tires, petroleum contaminated soils, and green liquor dregs and lime mud from paper mills. A permitted alternative fuel does not include coal, coke, waste oil, or any other fuel not likely to increase CO emissions.

- Compliance with the 30-operating day rolling average limits shall be calculated by dividing the total CO emissions over the past 30 operating days by the total tonnage of clinker produced during that period. Operating day means any 24-hr period beginning at 12:00 midnight during which the kiln operates for any time. For calculating the 30-operating day rolling average emissions, kiln operating days do not include the hours of operation during startup or shutdown.

- Startup of the kiln system means the time from when a shutdown kiln first begins firing fuel until it begins producing clinker. Startup begins when a shutdown kiln turns on the induced draft fan and begins firing fuel in the main burner. Startup ends when feed is being continuously introduced into the kiln for at least 120 minutes or when the feed rate exceeds 60 percent of the kiln design limitation rate, whichever occurs first.

  Shutdown of the kiln system means the cessation of kiln operation. Shutdown begins when feed to the kiln is halted and ends when continuous kiln rotation ceases.

- The startup, shutdown, and malfunction limit is in lb/hr rather than lb/ton of clinker because feed/clinker rates may be zero during such periods.

- CO emissions during the curing period after "re-bricking" occurs, when no clinker is being produced, don't have to meet the new CO production based emission limit, but will continue to be subject to the non-production based CO limits.

The existing licensed CO emission limits from the kiln stack shall remain as follows:

Pollutant	Emission Limit	Units	Averaging Time
CO	500.0	lb/hr	1-hour block average
	192.5	lb/hr	90-day rolling average
	843.2	tons/year	12-month rolling total, calculated at the end of each month

The proposed lb CO/ton of clinker produced emission limit and CO startup, shutdown, malfunction lb/hr emission limit meets the requirements of BACT.

C. Incorporation into the Part 70 Air Emission License

The requirements in this 06-096 CMR 115 New Source Review amendment shall apply to the facility upon amendment issuance. The conditions of this NSR amendment are included in the most recent Part 70 license renewal, as both licenses have been processed concurrently.

D. Annual Emissions

The facility's annual emissions are not changing with this amendment.

III. AMBIENT AIR QUALITY ANALYSIS

The short term and annual mass-based CO emission limits are remaining the same as currently licensed. No additional ambient air quality analysis is required to be performed for this amendment.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-326-77-2-A pursuant to the preconstruction licensing requirements of 06-096 CMR 115 and subject to the standard and special conditions below.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be

construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

(1) CO Kiln Stack Emissions

A. In addition to the currently licensed CO emissions Dragon shall be limited to the following:

Pollutant	Emission Limit	Units	Averaging Time	Operation Scenario	Origin & Authority
CO	2.6	lb/ton of clinker produced	30-operating day rolling average	Normal Operations (except the emission limit is not applicable during the curing period after "re-bricking" occurs when no clinker is being produced)	06-096 CMR 115, BACT & Facility Specific EPA Agreement
	3.2*	lb/ton of clinker produced	30-operating day rolling average	During usage of permitted alternative fuels (except the emission limit is not applicable during the curing period after "re-bricking" occurs, when no clinker is being produced)	06-096 CMR 115, BACT & Facility Specific EPA Agreement
	500.0	lb/hr	2-hr average	Startup, Shutdown, and Malfunction	06-096 CMR 115, BACT & Facility Specific EPA Agreement

Table Note:

* Emissions of CO shall not exceed Q, expressed as lb CO/ton clinker on a 30-operating day rolling average, when firing permitted alternative fuels:

$$Q = [L1 * C] + [L2 * PAF]$$

Where:

L1 = 2.6 lb CO/ton clinker
L2 = 3.2 lb CO/ton clinker
C = % (decimal or fraction less than 1) of BTUs input during the 30-day period from coal, pet coke and other fuels that are not considered to be permitted alternative fuels; c=1-PAF.
PAF = % (decimal or fraction less than 1) of BTUs input during the 30-day period from the combustion of permitted alternative fuels.

Permitted alternative fuels and raw materials are only those which would be expected to increase CO emissions, such as recycled carpet, tires, petroleum contaminated soils, and green liquor dregs and lime mud from paper mills. A permitted alternative fuel does not include traditional fuels (e.g. coal, coke, waste oil, etc.).

B. Compliance with the 30-operating day rolling average limits shall be calculated by dividing the total CO emissions over the past 30 operating days by the total tonnage of clinker produced during that period. Operating day means any 24-hr period beginning at 12:00 midnight during which the kiln operates for any time. For calculating the 30-operating day rolling average emissions, kiln operating days do not include the hours of operation during startup or shutdown. [06-096 CMR 115, BACT & Facility Specific EPA Agreement]

C. Startup and Shutdown

1. Startup of the kiln system means the time from when a shutdown kiln first begins firing fuel until it begins producing clinker. Startup begins when a shutdown kiln turns on the induced draft fan and begins firing fuel in the main burner. Startup ends when feed is being continuously introduced into the kiln for at least 120 minutes or when the feed rate exceeds 60 percent of the kiln design limitation rate, whichever occurs first.

2. Shutdown of the kiln system means the cessation of kiln operation. Shutdown begins when feed to the kiln is halted and ends when continuous kiln rotation ceases.

[06-096 CMR 115, BACT & Facility Specific EPA Agreement]

DONE AND DATED IN AUGUSTA, MAINE THIS 23 DAY OF December , 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
AVERY T. DAY, ACTING COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: September 18, 2008
Date of application acceptance: September 26, 2008

Date filed with the Board of Environmental Protection:

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.

Filed
DEC 29 2015
State of Maine
Board of Environmental Protection