



DEPARTMENT ORDER

**Dragon Products Company, LLC
Knox County
Thomaston, Maine
A-326-70-G-A**

**Departmental
Findings of Fact and Order
Part 70 Air Emission License
Amendment #2**

FINDINGS OF FACT

After review of the Part 70 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 (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Dragon Products Company, LLC
LICENSE TYPE	Part 70 Minor License Modification
NAICS CODES	32731
NATURE OF BUSINESS	Cement Manufacturing
FACILITY LOCATION	U.S. Route 1, Thomaston, Maine

Dragon Products Company, LLC (Dragon) manufactures portland cement using a dry process consisting of quarrying and crushing; raw materials grinding and blending; clinker production; and finish grinding, packaging, and storage.

The facility is an existing stationary source currently operating under the Part 70 license A-326-70-E-R/A issued March 3, 2016; Part 70 license amendment A-326-70-F-A issued June 16, 2016; and licenses to construct issued under the New Source Review Program as found in *Minor and Major Source Air Emission License Regulations*, 06-096 Code of Maine Regulations (C.M.R.) ch. 115 (as amended).

B. Amendment Description

Dragon has requested an amendment to the facility's Part 70 license pursuant to the provisions of U.S. Environmental Protection Agency (EPA) Consent Agreement and Final Order Docket No. CAA 01-2013-0053, Attachment 1, Section 8. Dragon has applied to amend its air emission license to include a new nitrogen oxides (NO_x) emission limit as proposed in the NO_x Demonstration Report provided to the EPA and the Department on January 8, 2016, and approved by EPA on February 23, 2016.

C. Emission Equipment

The following emission unit is addressed by this Part 70 License:

Fuel Burning Equipment

Equipment	Nominal Capacity* (MMBtu/hr)	Nominal Firing Rate *	Fuel Type, % sulfur	Installation Date	Pollution Control Equipment	Stack #
Kiln (U804) [with alkali (preheater) bypass U866]	440.0	14.35 tph	Coal, 1.3%	2004	Baghouse, SNCR	1
		14.35 tph	Petroleum Coke, 4.5%			
		30.0 gpm	Distillate Fuel, 0.5%			
		28.0 gpm	#4 Fuel oil, 0.5%			
		30.0 gpm	Specification and Non-Specification Waste Oil			
		20% of total fuel usage	Whole Tires or Chips			
		variable	Polypropylene/polyester fiber material			

* The listed capacity or firing rate for the Kiln within the Findings of Fact section is for identification purposes only. Capacities determined to be license limits are noted as such in the Order section of this license.

D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date of issuance of this license.

A Part 70 Minor License Modification is for a license change that meets the following criteria:

- Does not violate any Applicable requirement;
- Does not involve a Part 70 Significant License Modification to existing monitoring, reporting, or recordkeeping requirements in the license (although it does include *new* monitoring, reporting, or recordkeeping requirements);
- Does not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impact or a visibility or increment analysis;
- Does not seek to establish or change a Part 70 license term or condition for which there is no corresponding underlying Applicable requirement, and that the source has assumed to avoid an Applicable requirement to which the source would otherwise be subject. Such terms and conditions include a federally enforceable emissions cap assumed to avoid classification as a Title I modification or a modification or reconstruction under any provision of Section 111, or 112 of the Clean Air Act (CAA); and an alternative emissions

limit approved pursuant to regulations promulgated under § 112(i)(5) of the Clean Air Act (CAA);

- Is not a Title I modification or a modification or reconstruction under any provision of Section 111 or 112 of the CAA, and
- Is not required by the Department to be processed under Part 70 Significant License Modification procedures.

The request to add a NO_x limit in lb/ton of clinker is not a Part 70 Significant License Modification. Although this license amendment is adding a NO_x limit in units not previously required in the facility's Part 70 license, the facility is not proposing substantial changes to *existing* monitoring and testing requirements, nor is it proposing the *relaxation* of existing license conditions (definition of *Part 70 Significant Modification*).

The facility's request is classified as a Part 70 Minor License Modification and has been processed under *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 (as amended).

II. PART 70 MINOR LICENSE MODIFICATION DESCRIPTION

A. Overview

A consent agreement and final order between Dragon and U.S. EPA dated September 17, 2013, required the facility to fulfill certain requirements, stated in Specific Condition (14) K of Dragon's Part 70 air emission license (A-326-70-E-R/A, issued March 3, 2016) as follows:

NO_x EPA Consent Agreement and Final Order

Dragon shall comply with the remaining requirements of the EPA Consent Agreement and Final Order (CAFO) (Docket No. CAA 01-2013-0053 filed with the Regional Hearing Clerk on September 17, 2013) and air emission license amendment A-326-77-7-M (Feb. 25, 2014), including, but not limited to: operating during a demonstration period when the SNCR shall be operated to maintain a molar ratio of 1.0 (with a ratio adjustment allowed if needed to meet ammonia slip limits), submitting a Demonstration Report at the end of the demonstration period with a proposed 30 day rolling average emission limit of lb NO_x/ton clinker, and applying for a license amendment.

After fulfilling the demonstration period and reporting requirements and proposing an emission limit for lb NO_x/ton clinker in accordance with the CAFO, Dragon has requested an amendment to the facility's Part 70 license pursuant to the provisions of EPA Consent Agreement and Final Order Docket No. CAA 01-2013-0053, Attachment 1, Section 8. Dragon has applied to amend its air emission license to include an additional NO_x emission limit as proposed in the NO_x Demonstration Report provided to the EPA and the Department on

January 8, 2016. In a letter from the EPA dated February 23, 2016 letter, EPA approved Dragon's proposed NO_x limit of 2.33 lb/ton of clinker, on a 30-day rolling average basis, utilizing the following terms as defined in the CAFO:

- *Operating Day* shall mean any day which includes an Operating Hour.
- *Operating Hour* shall mean any hour of a calendar day when raw material is being fed into the Kiln and fuel is being fired in the Kiln.

Each Operating Day, compliance with the 30-day rolling average emission limit shall be determined by dividing the total pounds of NO_x emitted by the Kiln during that Operating Day and the previous 29 Operating Days by the total tons of clinker produced by the Kiln during the same 30 Operating Days.

The Department approves the proposed limit and compliance demonstration method, in accordance with the CAFO and the acceptability of the proposal as provided in the EPA's February 23, 2016 letter.

B. Facility Annual Emissions

This Part 70 Minor License Modification will not result in any change to the annual emissions as quantified in the facility's Air Emission Licenses, including any amendments.

III. AMBIENT AIR QUALITY ANALYSIS

Dragon previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-326-71-U-A/R, issued on November 19, 2002). An additional ambient air quality analysis is not required for this Part 70 license amendment.

ORDER

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

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

The Department hereby grants the Part 70 License Amendment A-326-70-G-A pursuant to 06-096 C.M.R. 140 and the preconstruction permitting requirements of *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115, and subject to the conditions found in Air Emission License A-326-70-E-R/A, in amendment A-326-70-F-A, and the following conditions.

Federally enforceable conditions in this Part 70 license may only be changed pursuant to the applicable requirements in 06-096 C.M.R. ch. 115 for making such changes and pursuant to the applicable requirements in 06-096 C.M.R. ch. 140.

For each specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only**.

Severability. The invalidity or unenforceability of any provision of this License or part thereof 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

Specific Condition (14) E and F of Air Emission License A-326-70-E-R/A (March 3, 2016) shall be replaced by the following:

(14) Dry Process Portland Cement Kiln System

E. Kiln System Emission Limits and Standards

The Kiln System (including the raw mill alkali bypass) shall be limited to the following emission limits and standards:

Pollutant	Licensed Emission Limits and Standards	Operating Scenario	Origin and Authority
PM	9.4 lb/hr	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	0.07 lb/ton clinker ^g	normal operation	40 CFR Part 63, Subpart LLL, § 63.1343(b)(1)
	work practices ^g	startup and shutdown ^a	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1) and § 63.1346(f)
PM ₁₀	9.4 lb/hr	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
SO ₂	1,000 lb/hr (1-hour block average)	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	70 lb/hr (90-day rolling average ^e)	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
SO ₂	306.6 tons/yr (12-month rolling total, calculated at the end of each calendar month ^e)	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)

Pollutant	Licensed Emission Limits and Standards	Operating Scenario	Origin and Authority
NO _x (NO _x reported as NO ₂)	1,200 lb/hr (1-hour block average)	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	350.0 lb/hr (90-day rolling average ^c)	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	1,533.0 tons/yr (12-month rolling total, calculated at the end of each calendar month ^c)	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	2.33 lb/ton of clinker (30-day rolling average) ⁱ	all operating days (defined below) ⁱ	U.S. EPA Consent Agreement and Final Order Docket No. CAA 01-2013-0053; and 06-096 C.M.R. ch. 140, BPT
CO	500 lb/hr (1-hour block average)	normal operations	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	192.5 lb/hr (90-day rolling average ^c)	normal operations	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	843.2 tons/yr (12-month rolling total, calculated at the end of each calendar month ^c)	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	500.0 lb/hr (2-hour block average)	startup, shutdown, malfunction ^a	06-096 C.M.R. ch. 115, BACT (A-326-77-2-A) & Facility Specific EPA Requirement
	2.6 lb/ton of clinker (30-operating day rolling average ^d)	normal operations, except during the curing period after re-bricking occurs when no clinker is produced	
	3.2 lb/ton of clinker ^b (30-operating day rolling average ^d)	during usage of permitted alternative fuels, except during the curing period after re-bricking occurs when no clinker is produced	
VOC	13.13 lb/hr	all	06-096 C.M.R. ch. 115, BACT (A-326-71-U-A/R, Nov. 19, 2002)
	57.5 tons/yr (12-month rolling total, calculated at the end of each calendar month ^c)	all	

Pollutant	Licensed Emission Limits and Standards	Operating Scenario	Origin and Authority
Visible Emissions (Opacity)	20% opacity on a 6-minute block average basis, except for not more than one six-minute block average in a 1-hr period	all except for when the exhaust, as measured at the kiln ID fan, is less than 250°F, monitored opacity greater than 20% as measured on a 6-minute block average basis is not considered an excess emission	06-096 C.M.R. ch. 140, BPT (A-326-70-A-I, Dec. 31, 2003) Enforceable by State Only
Ammonia (NH ₃)	20 ppm _{dv} corrected to 7% O ₂ (1-hr block average) 6.3 lb/hr	raw mill on	A-326-70-B-A (July 24, 2007) Enforceable by State Only
	40 ppm _{dv} corrected to 7% O ₂ (1-hr block average) 12.3 lb/hr	raw mill off	A-326-70-B-A (July 24, 2007) Enforceable by State Only
Dioxin/ Furans	0.2 ng/dscm (TEQ ^f) corrected to 7% O ₂ (rolling 30-day average ^f)	normal operation and if the average inlet temperature to the first PM control device during the D/F performance test is >400°F	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1)
	0.4 ng/dscm (TEQ ^f) corrected to 7% O ₂ (rolling 30-day average ^f)	normal operation and if the average inlet temperature to the first PM control device during the D/F performance test is ≤400°F	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1)
	work practices ^g	startup and shutdown ^a	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1) and § 63.1346(f)
Mercury	55 lb/MM tons clinker ^g (rolling 30-day average ^e)	normal operation	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1)
	work practices ^g	startup and shutdown ^a	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1) and § 63.1346(f)
	42 lb/calendar year	all	38 M.R.S. 585-B(5)(B) and A-326-77-3-A (7/17/2014)
THC (measured as propane)	24 ppm _{vd} corrected to 7% O ₂ ^g or alternative limit of 12 ppm _{vd} for total organic HAP corrected to 7% O ₂ ^g (both on a rolling 30-day average ^e)	normal operation	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1)

Pollutant	Licensed Emission Limits and Standards	Operating Scenario	Origin and Authority
THC (measured as propane)	work practices ^g	startup and shutdown ^a	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1) and § 63.1346(f)
HCl	3 ppmvd corrected to 7% O ₂ ^h (rolling 30-day average ^e)	normal operation	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1)
	work practices ^g	startup and shutdown ^a	40 C.F.R. Part 63, Subpart LLL, § 63.1343(b)(1) and § 63.1346(f)

Table Notes:

^a Startup/Shutdown Definitions:

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. Defined in 40 C.F.R. Part 63, §63.1341.

Shutdown means the cessation of kiln operation. Shutdown begins when feed to the kiln is halted and ends when continuous kiln rotation ceases. Defined in 40 C.F.R. Part 63, §63.1341.

^b 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.

- ^c *90-day rolling average* and *12-month rolling total* are calculated as consecutive days or months and include operating and non-operating days.
- ^d *30-operating day rolling average* for the CO lb/ton of clinker limit is calculated by dividing the total 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.
- ^e *rolling 30-day average* for mercury, THC, and HCl is defined in 40 C.F.R. Part 63, Subpart LLL § 63.1343(a) as “The 30-day period means 30 consecutive kiln operating days excluding periods of startup and shutdown.” Operating day is defined in 40 C.F.R. Part 63, Subpart LLL § 63.1341 as “Operating day means any 24-hr period beginning at 12:00 midnight during which the kiln operates for any time. For calculating the rolling 30-day average emissions, kiln operating days do not include the hours of operation during startup or shutdown.”
- ^f *TEQ* means the international method of expressing toxicity equivalents for dioxins and furans as defined in U.S. EPA, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and -dibenzofurans (CDDs and CDFs) and 1989 Update, March 1989.
- ^g In effect on the compliance date in 40 C.F.R. Part 63, Subpart LLL (currently stated in the rule as September 9, 2015) or until the source certifies compliance with the limits, whichever is earlier (§ 63.1343(a)).
- ^h The compliance demonstration date for HCl is September 9, 2016, since Dragon received a 1-year extension due to availability issues with the HCl monitor calibration gas.
- ⁱ *Operating Day* shall mean any day which includes an Operating Hour.
Operating Hour shall mean any hour of a calendar day when raw material is being fed into the Kiln and fuel is being fired in the Kiln.

Each Operating Day, compliance with the 30-day rolling average lb NO_x/ton clinker emission limit shall be determined by dividing the total number of lb NO_x emitted by the Kiln during that Operating Day and the previous 29 Operating Days by the total tons of clinker produced by the Kiln during the same 30 Operating Days.

F. Emission Limit Compliance Methods

Compliance with the emission limits listed above shall be demonstrated in accordance with the following methods and frequencies, or other methods and frequencies as approved by the Department [06-096 C.M.R. ch. 140, BPT and 40 C.F.R. Part 63, Subpart LLL]:

Pollutant	Applicable Emission Limit	Compliance Method	Origin and Authority	Frequency
PM	lb/hr and lb/ton of clinker	Stack Test: 40 C.F.R. Part 60, App. A, Method 5 or 5I, and shall consist of three 1-hr tests	A-326-71-U-A/R, BACT (Nov. 19, 2002) and § 63.1349(b)(1)	every 12 months
	lb/ton of clinker ^a	Particulate Matter Continuous Parameter Monitoring System (PM CPMS)	40 C.F.R. Part 63, Subpart LLL, § 63.1348(b)(2), § 63.1349(b)(1), and § 63.1350(b)(1) and (d)	continuously
PM ₁₀	lb/hr	Stack Test: 40 C.F.R. Part 60, App. A, Method 5 or EPA Test Method 201 or 201A, and shall consist of three 1-hr tests	A-326-71-U-A/R, BACT (Nov. 19, 2002)	as requested
SO ₂	lb/hr	Calculated from CEMS data	A-326-71-U-A/R, BACT (Nov. 19, 2002)	continuously (in accordance with 40 C.F.R. Part 60, App. B)
NO _x	lb/hr and lb/ton of clinker	Calculated from CEMS data	06-096 C.M.R. ch. 117	continuously (in accordance with 40 C.F.R. Part 60, App. B)
CO	lb/hr and lb/ton of clinker	Calculated from CEMS data	06-096 C.M.R. ch. 117	continuously (in accordance with 40 C.F.R. Part 60, App. B)

Pollutant	Applicable Emission Limit	Compliance Method	Origin and Authority	Frequency
VOC	lb/hr	Stack Test: 40 C.F.R. Part 60, App. A, Method 25 or 25A	A-326-71-U-A/R, BACT (Nov. 19, 2002)	as requested
Visible Emissions	%	COMS	06-096 C.M.R. ch. 117	continuously (in accordance with 40 C.F.R. Part 60, App. B)
NH ₃	ppmdv and lb/hr	Stack Test: Conditional Test Method 027	A-326-70-B-A (July 24, 2007)	once every other year ^b
Dioxin/ Furans	ng/dscm	Stack Test: 40 C.F.R. Part 60, App. A, Method 23	40 C.F.R. Part 63, Subpart LLL, § 63.1348(b)(4), § 63.1349(b)(3), and § 63.1350(g)	every 30 months
		Kiln System baghouse inlet temperature		continuously
Hg	lb/MM tons clinker and lb/calendar year	Calculated from CEMS data ^c	A-326-77-3-A (July 17, 2014) and 40 C.F.R. Part 63, Subpart LLL, § 63.1348(b)(7), § 63.1349(b)(5), and § 63.1350(k)	continuously (in accordance with 40 C.F.R. Part 60, App. B)
THC	ppmvd	CEMS	40 C.F.R. Part 63, Subpart LLL, § 63.1348(b)(4), § 63.1349(b)(4), and § 63.1350(i)	continuously (in accordance with 40 C.F.R. Part 60, App. B)
HCl	ppmvd	CEMS ^d	40 C.F.R. Part 63, Subpart LLL, § 63.1348(b)(8), § 63.1349(b)(6), and § 63.1350(l)	continuously (in accordance with 40 C.F.R. Part 60, App. B)

Table Notes:

- ^a Compliance with the lb/ton clinker emission limit is demonstrated using a mA Operating Limit per § 63.1349.
- ^b For ammonia (NH₃), stack testing is not required if a CEMS is utilized in the future to continuously monitor NH₃ emissions.
- ^c For calendar year 2015, compliance with the lb/calendar year mercury limit shall be based on the average mercury emission factor calculated

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from the previous CEMS trial data (0.054 lb/hr) and the actual production hours from January until the date the permanent CEMS is certified (no later than September 9, 2015). This calculation shall be added to the actual CEMS data collected from the date of the CEMS certification through December 2015 to get the total mercury emissions for 2015.

- ^d Dragon requested and received a compliance demonstration extension for 1 year (until September 9, 2016) for HCl due to the delay in availability of NIST-traceable (National Institute for Standards and Technology) calibration gases required for HCl CEMS.

DONE AND DATED IN AUGUSTA, MAINE THIS 21 DAY OF November, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Paul Mercer*
PAUL MERCER, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-326-70-E-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 4/7/2016

Date of application acceptance: 4/11/2016

Date filed with the Board of Environmental Protection:

This Order prepared by Jane E. Gilbert, Bureau of Air Quality.

