



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PAUL MERCER
COMMISSIONER

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

**Departmental
Findings of Fact and Order
Part 70 Air Emission License
Amendment #1**

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 Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (the 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, and licenses to construct issued under the New Source Review Program as found in 06-096 CMR 115, *Minor and Major Source Air Emission License Regulations* (as amended).

Dragon has requested an amendment to the facility's Part 70 license to incorporate the terms and conditions of New Source Review (NSR) license A-326-77-9-A issued May 10, 2016. This NSR license was issued for the addition of a Slag Dryer to the facility to remove excess moisture from granulated blast furnace slag.

B. Emission Equipment

The following emission unit is addressed in this Part 70 License Amendment:

Fuel Burning Equipment

Equipment	Max. Input Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur by weight	Dates of...		Stack #
				Manufacture	Installation	
F651: Slag Dryer Burner	75.6	75,600 ft ³ /hr	Natural gas, negligible	2015	2016	#1

Process Equipment

Equipment	Production Rate	Pollution Control Equipment	Stack #
F650: Slag Dryer	100 tons/hour of slag	Dust collector	#1
F652: Discharge Conveyor			

C. Application Classification

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;
- 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 section 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 Slag Dryer is not a Part 70 Significant License Modification. 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 Code of Maine Rules (CMR) 140 (as amended).

II. AMENDMENT DESCRIPTION

A. Slag Dryer Description

Dragon is licensed to install and operate a 75.6 MMBtu/hour, 100 tons/hour dryer to remove moisture from granulated blast furnace slag (slag). Slag is a non-hazardous byproduct of the steel manufacturing process. Dragon processes coarse, unground slag in the existing cement finish mill for sale to the concrete ready-mix market. The Slag Dryer is used to remove excess moisture from the coarse slag prior to introduction into the finish mill system. Results of analyses of the material confirm it is non-hazardous, and off-gas testing has been conducted which confirms no total hydrocarbon (THC) emissions will be generated from the heating of slag in the Slag Dryer.

The Slag Dryer, a horizontal, rotating drum, has a burner at one end; wet slag material is introduced at the other end and moves through the dryer countercurrently to the exhaust gases. The unit is located in the building known as the Old Mill Room. The dryer system utilizes a 75.6 MMBtu/hour industrial burner manufactured by Eclipse/Hauck and fires natural gas. A single, dedicated baghouse is utilized for dust collection for the control of particulate matter (PM) emissions from the Slag Dryer.

Dragon has requested a maximum dryer production limit of 75,000 tons per year. Based on maximum production hours at capacity with the licensed production limitation, Dragon estimates the unit's annual fuel use of approximately 56.7 MMscf of natural gas.

B. Best Practical Treatment (BPT) and Emission Standards

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 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

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

The BACT analysis documented in NSR license A-326-77-9-A (May 10, 2016) for the Slag Dryer identified the following as BACT:

<u>Pollutant</u>	<u>Control Equipment</u>
PM, PM ₁₀ , PM _{2.5}	Baghouse with 99.9% control efficiency; 0.01 gr/dscf
SO ₂	Good combustion controls; firing natural gas
NO _x	Good combustion controls; firing natural gas; 0.1 lb/MMBtu
CO	Good combustion controls; firing natural gas
VOC	Good combustion controls; firing natural gas
Visible Emissions	Good combustion controls; firing natural gas
Greenhouse Gases (GHG)	Operation and maintenance practices to maximize combustion efficiency while firing natural gas

Emission limits for the Slag Dryer firing natural gas are based the following emission factors:

<u>Pollutant</u>	<u>Emission Factor</u>	<u>Source of Emission Factor</u>
PM, PM ₁₀ , PM _{2.5}	0.12 lb/MMBtu	06-096 CMR 103(2)(B)(1)(a)
	7.6 lb/MMscf	AP-42, Table 1.4-2 (7/98)
	0.01 gr/dscf	After baghouse controls
SO ₂	0.6 lb/MMscf	AP-42, Table 1.4-2 (7/98)
NO _x	100 lb/MMscf	AP-42, Table 1.4-1 (7/98)
CO	84 lb/MMscf	
VOC	5.5 lb/MMscf	AP-42, Table 1.4-2 (7/98)
Visible Emissions	--	06-096 CMR 101

The BACT emission limits for the Slag Dryer firing natural gas are the following:

<u>Unit</u>	<u>PM, lb/hr</u>	<u>PM₁₀, lb/hr</u>	<u>PM_{2.5}, lb/hr</u>	<u>SO₂, lb/hr</u>	<u>NO_x, lb/hr</u>	<u>CO, lb/hr</u>	<u>VOC, lb/hr</u>
Slag Dryer 75.6MMBtu/hour firing natural gas	Negligible (based on the AP-42 emission factor for natural gas combustion and a baghouse control efficiency of ≥ 99.9%)			0.05	7.56	6.35	0.42

Compliance with the above limits shall be demonstrated by emissions testing as requested by the Department.

Visible emissions from the Slag Dryer shall not exceed 10% opacity on a six-minute block average basis. Dragon shall take corrective action if visible emissions from the baghouse exceed 5% opacity.

C. Control Equipment

Dragon shall maintain and operate a baghouse to control emissions during operation of the Slag Dryer. Dragon shall maintain records of all routine and non-routine maintenance conducted on the baghouse. Such records shall contain the location, date, nature of maintenance or failure, and maintenance action taken or action taken to correct the failure. [A-326-77-9-A (May 10, 2016), BPT]

D. Periodic Monitoring

Periodic monitoring for the Slag Dryer shall include recordkeeping of slag throughput, both on a monthly and 12-month rolling total basis. These records shall be based on the quantity of product exiting the Slag Dryer. [A-326-77-9-A (May 10, 2016), BPT]

E. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Federal regulation 40 CFR Part 63, Subpart LLL, *National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry*, specifies requirements for emissions of hazardous air pollutants from the Portland cement manufacturing industry. According to the definitions in Subpart LLL and as confirmed by a letter from EPA to the facility dated August 14, 2014, the Slag Dryer is considered a finish material dryer. Because the Slag Dryer is only to be used to dry slag, a product used in concrete, and not used to dry a material used in the production of portland cement, the unit is not subject to Subpart LLL.

F. Annual Emissions

Dragon is licensed for the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on 8760 hours/year operation for PM emissions from the Kiln System and Clinker Cooler; previous tpy limits for SO₂, NO_x, CO, and VOC from the Kiln System and Clinker Cooler (established in the licensing of the wet-to-dry process modification); 100 hours/year operation for each generator; and a maximum annual production limit of 75,000 tons of slag through the Slag Dryer:

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC	NH₃
Kiln System	41.2	41.2	306.6	1,533.0	843.2	57.5	32.9
Clinker Cooler	40.1	40.1	--	--	--	--	--
Emergency Generator	0.02	0.02	0.0003	0.83	0.18	0.07	--
Quarry #1 Pump	0.01	0.01	0.0001	0.37	0.08	0.03	--
Kiln Emergency Drive Engine	0.01	0.01	0.0001	0.23	0.05	0.02	--
Slag Dryer	--	--	0.02	2.84	2.38	0.16	--
Total TPY	81.3	81.3	306.6	1,537.3	845.9	57.8	32.9

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 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-F-A pursuant to 06-096 CMR 140 and the preconstruction permitting requirements of 06-096 CMR 115 and subject to the conditions found in Air Emission License A-326-70-E-R/A and the following conditions.

Federally enforceable conditions in this Part 70 license amendment must be changed pursuant to the applicable requirements in 06-096 CMR 115 for making such changes and pursuant to the applicable requirements in 06-096 CMR 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 Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This license amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following is a new condition:

(33) **Slag Dryer F650**

- A. Dragon shall process a maximum of 75,000 tons per year of slag in the Slag Dryer, based on the quantity of product exiting the Slag Dryer. Records shall be maintained documenting compliance with this limit on a monthly and 12-month rolling total basis. [A-326-77-9-A (May 10, 2016), BPT]
- B. Emission limits for the Slag Dryer firing natural gas and with baghouse control of emissions are the following:

Unit	PM, gr/dscf	PM, lb/hr	PM ₁₀ , lb/hr	PM _{2.5} , lb/hr	SO ₂ , lb/hr	NO _x , lb/hr	CO, lb/hr	VOC, lb/hr
Slag Dryer 75.6MMBtu/hour firing natural gas	0.01	Negligible			0.05	7.56	6.35	0.42

Visible emissions from the Slag Dryer shall not exceed 10% opacity on a six-minute block average basis. Dragon shall take corrective action if visible emissions from the baghouse exceed 5% opacity. [06-096 CMR 101]

C. Dragon shall maintain and operate a baghouse to control emissions during operation of the Slag Dryer. Dragon shall maintain records of all routine and non-routine maintenance conducted on the baghouse. Such records shall contain the location, date, nature of maintenance or failure, and maintenance action taken or action taken to correct the failure. [A-326-77-9-A (May 10, 2016), BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS 16 DAY OF June, 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Paul Allen Robert Case* for
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: February 22, 2016

Date of application acceptance: February 25, 2016

Date filed with the Board of Environmental Protection:

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

