General Portland Inc.
Florida Division

August 28, 1986

Mr. Bill Thomas
Permits Division
Florida Department of Environmental Regulations
2200 Blair Stone Road
Tallahassee, Florida 32301

Re: AC29-122068

Dear Mr. Thomas:

This will serve to transmit copies of General Portland's request for a modification to construction permit No. AC29-122068 submitted June 25, 1986 for your review. This will also serve to answer your request for additional information to Mr. Eric Sundquist dated July 29, 1986. General Portland Inc., for economic reasons, requests modification of the referenced permit application for a vacuum type cement unloading system at our plant in Tampa, Florida to include two 15,000 ton bulk cement storage silos rather than one 30,000 ton silo presented in the original application. The attached sheets and drawings detail the extent of the modification requested.

We appreciate the meeting in your offices on August 28, 1986 and supply this response to your request for additional information. Questions Numbers 1 and 2 of your July 29 letter are addressed and answered in the attached sheets covering the modification, except for your question regarding Dust Collector No. 26. This Collector is not required during cement unloading and is not a part of this permit request.

In answer to your Question No. 3, the vacuum unloading system to be constructed as a result of this permit application will create a slight negative pressure condition in the hold of the ship during it's operation, and therefore no estimate of yearly particulate emissions are required.

In answer to your Question No. 4, General Portland expects the DER permit to state that the maximum unloading rate is 1100 tons per hour. The permitted unloading time for this project is 1733 hours per year. The unloading rate of 520 tons per hour is an average. The permitted rate should be a maximum of 1100 tons per hour. This variation between the average and the maximum is

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due to the clean-up time involved in cleaning the hold of the ship with the vacuum attachments and the time required to move the ship at the dock, so that the vacuum unloader can reach each hold which contains cargo. This additionl time will reduce the unloading rate from a maximum of 1100 tons per hour to an average of 520 tons per hour.

I hope this answers each question to your satisfaction. If you have any additional questions, please do not hesitate to contact me.

Very truly yours,

William H. Winders

William H. Winders
Environmental Manager

WHW:ld

cc: R. D. Auten
E. H. Sundquist
S. L. Stiles
J. F. Chadbourne
Roger Stewart

~~Bill~~ - 9/8
Inc. Reponse -
Maker + dist.
copied -
Please return
for file
Patty

August 26, 1986

ATTACHMENT I

DESCRIPTION OF THE PROPOSED MODIFICATION TO THE TAMPA CEMENT UNLOADING PROJECT

PERMIT NUMBER AC29-122068

This permit modification is intended to replace the original 30,000 ton silo in the original application with two 15,000 ton Storage Silos of a vacuum-type ship unloading system. The vacuum-type system is an environmentally secure system and clearly superior to other open-hold unloading equipment presently available.

General Portland Inc. seeks construction permit authority for a vacuum finished cement unloading system to unload 900,000 tons per year of Portland Cement from gearless bulk cargo ships and to continue the unloading of cement clinker at our dock through the presently permitted Phase I clinker unloading system as built. Permission is not requested for both operations concurrently, except during the period of construction and transition from clinker to cement. During this period we do not intend to import more product than approved. At the completion of construction of the vacuum cement unloading system General Portland intends to seek an operating permit which will allow the unloading of finished cement.

General Portland's finished cement unloading project includes the construction of a new concrete dock section, three new dolphins, and a new shore mooring at the northwest corner of our property (separate permits will be submitted for this dock work). The purchase of two vacuum type 400 ton per hour ship unloading systems as manufactured by Cyclonaire or their equal will provide a dust-free environmentally sound ship unloading system. We will utilize the present existing and permitted Dust Collector No. 27 and 28 in the transfer of the cement over the existing No. 7 conveyor belt. We will construct two new 15,000 ton cement storage silos and install new Dust Collectors No. 42 and No. 43 to vent the silo during ship unloading and silo filling. A new Dust Collector, No. 50, will vent the air slide and elevator for the transfer of cement from the new cement storage silos to the grinding mills and mill-feed silos. Two new dust collectors, Dust Collector No. 51 and No. 52, will vent the air slide and the bulk cement load-out spouts under the two large storage silos. Four new small dust collectors, No. 46 thru No. 49, will be added to vent cement transport for regrinding. The Cyclonaire vacuum systems will also have internal dust control systems which are highly efficient.

This application as submitted is intended to include all particulate and fugitive particulate emissions sources in the categories of cement unloading, transport, handling, storage and loadout of the Cement Unloading System at the Tampa Plant.

August 26, 1986

PERMIT #AC29-122068
PROPOSED MODIFICATION FOR CEMENT UNLOADING

DUST COLLECTOR EMISSION CALCULATIONS:

Assumptions:

1. Average yearly cement imported 900,000 tons.
2. Average ship cargo size of 27,300 tons.
3. Average number of ship arrivals is 33 per year.
4. Average cement unloading rate is 520 tons/hour which includes clean-up time.
5. Average unloading time is 1,733 hrs. per year.

SAMPLE CALCULATION

18,000 CFM x 0.03 gr/ft^3 x 1/7000 gr/# x 60 min/hr x 1013 hr/yr x 1/2000 #/ton = 2.34 Tons Per Year.

Dust Collector No. 27

Existing Collector No. 27 is permitted for 720 hrs/yr by Permit #AO29-115401. From Assumptions above, 1733 hours of operation per year will be required.

18,000 x .03 x 1/7000 x 60 x 1/2000 x 1733 = 4.01 TPY

Dust Collector No. 28

Existing Collector No. 28 is permitted for 720 hrs/yr at 6000 CFM by Permit No. AO29-115402 and previous Dust Collector at location No. 20 which is now one-half of Dust Collector No. 28 is permitted in AO29-47653 for 8760 hrs/yr at 6000 CFM. Therefore, because one-half is already permitted for full time operation at 6000 CFM, from Assumptions above, 1733 hours of operation per year will be required for the other half at 6000 CFM.

6000 x .03 x 1/7000 x 60 x 1/2000 x 1733 = 1.34 TPY

Dust Collector No. 42

Located atop new north silo and used during ship unloading and silo filling.

8000 x .03 x 1/7000 x 60 x 1/2000 x 1733 = 1.78 TPY

Dust Collector No. 43

Located atop new south silo and used during ship unloading and silo filling.

10,000 x .03 x 1/7000 x 60 x 1/2000 x 1733 = 2.22 TPY

Dust Collector No. 44

Furnished by Manufacturers of Vacuum Unloading System and guaranteed to meet 0.02 grains per standard cubic foot per minute. 1733/hrs/yr will be required from Assumptions above. Manufacturers information indicates that Dust Collector No. 44 and No. 45 will meet or exceed 0.009 grains per cubic foot of air. The 0.03 gr/ft^3 is used for calculation of emissions.

5280 x .03 x 1/7000 x 60 x 1/2000 x 1733 = 1.18 TPY.

Dust Collector No. 45

Same rational as Dust Collector No. 44 above.

5280 x .03 x 1/700 x 60 x 1/2000 x 1733 = 1.18 TPY.

Dust Collector No. 46

This Dust Collector supports the transfer of finished cement to other cement silos. It will require 3000 hours per year.

1500 x .03 x 1/7000 x 60 x 1/2000 x 3000 = 0.58 TPY.

Dust Collector No. 47, No. 48 & No. 49

Support of the cement regrind in finish mills No. 8, 9 and 10 will require the operation of Dust Collectors for a total of 9480 hours annually. The 3160 hours used in each calculation of emissions is an average number and may vary slightly. The total hours for these three (3) Dust Collectors will not exceed 9480 hours per year.

1500 x .03 x 1/7000 x 60 x 1/2000 x 3160 = 0.61 TPY.

Dust Collector No. 50

Required to vent cement transfer operations of airslide and bucket elevator, required 1500 hrs. per year.

4000 x .03 x 1/7000 x 60 x 1/2000 x 1500 = 0.77 TPY.

Dust Collector No. 51

Serves north silo truck loading spouts.

7000 x .03 x 1/7000 x 60 x 1/2000 x 2100 = 1.89 TPY.

Dust Collector No. 52

Serves south silo truck loading spout.

7000 x .03 x 1/7000 x 60 x 1/2000 x 2100 = 1.89 TPY.

August 26, 1986
Permit No. AC29-122068

PROJECT MODIFICATION
EMISSION SUMMARY

Dust Collector No.	Emissions Tons Per Year
27	4.01
28	1.34
42	1.78
43	2.22
44	1.18
45	1.18
46	0.58
47	0.61
48	0.61
49	0.61
50	0.77
51	1.89
52	1.89
Total Project Emissions	18.67

August 26, 1986
Attachment II

COST OF POLLUTION CONTROL SYSTEMS
TAMPA CEMENT UNLOADING, HANDLING AND STORAGE

Location & Item	Purchase	Installation	Total
Item 42 - Venting transfer equipment-top of new silos 1-8000 CFM Baghouse with fan & ductwork	25,000	15,000	40,000
Item 43 - Venting new silos top of new silos 1-10,000 CFM baghouse with fan & ductwork	32,000	18,000	50,000
Item 50 - Venting transfer elevator and airslide 1-4000 CFM baghouse with fan & ductwork	12,000	8,000	20,000
Item 51 - Venting north silo loading equipment 1-7000 CFM baghouse with fan & ductwork	21,000	13,000	34,000
Item 52 - Venting south silo loading equipment 1-7000 CFM baghouse with fan & ductwork	21,000	13,000	34,000
Items 46, 47, 48 & 49 1500 CFM each - venting existing drag conv. bottom existing clinker silos with fan & ductwork	16,000	9,000	25,000
Compressors	14,000	20,000	34,000
Power & wiring	22,000	61,000	83,000
Sub-total	163,000	157,000	320,000
Engineering		48,000	48,000
Contingency	16,000	21,000	37,000
TOTAL	179,000	226,000	405,000

August 26, 1986

ATTACHMENT VI

GENERAL PORTLAND INC.
TAMPA PLANT
FABRIC FILTERS

Point Number (from Flow Diagram)	Manufacturer & Model No. (if available)
Location No. 42	Industrial Filter Model AA-1015 or Equal
Name of Abatement Device	**Type of Particulate Controlled**
Dust Collector	Portland Cement Dust

GAS STREAM CHARACTERISTICS

Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
8,000	8,000	Ambient	8	0.02

Pressure Drop (in. H_2O)	Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp)	Fan Requirements (ft^3/min)
8	Ambient	30	8,000

PARTICULATE DISTRIBUTION
(By Weight)

Micron Range	Inlet	Outlet
0.0-0.5	%	%
0.5-1.0	%	%
1.0-5.0	%	%
5-10	%	%
10-20	%	%
over 20	%	%

FILTER CHARACTERISTICS

Filtering Velocity (acfm/ft^2 of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
5.3	5	8	143	One

Bag rows will be:	Walkways will be provided between banks of bags:
Staggered (Straight)	Yes (No)

Filtering Material: Polyester

Describe Bag Cleaning Method and Cycle: Reverse pulse jets of high pressure air with adjustable cycle.

ADDITIONAL INFORMATION

August 26, 1986

ATTACHMENT VI

GENERAL PORTLAND INC.
TAMPA PLANT
FABRIC FILTERS

Point Number (from Flow Diagram)	Manufacturer & Model No. (if available)
Location No. 43	Industrial Filer Model AA-1020 or Equal
Name of Abatement Device	**Type of Particulate Controlled**
Dust Collector	Portland Cement Dust

GAS STREAM CHARACTERISTICS

Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
10,000	10,000	Ambient	8	0.02

Pressure Drop (in. H_2O)	Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp)	Fan Requirements (ft^3/min)
8	Ambient	40	10,000

PARTICULATE DISTRIBUTION
(By Weight)

Micron Range	Inlet	Outlet
0.0-0.5	%	%
0.5-1.0	%	%
1.0-5.0	%	%
5-10	%	%
10-20	%	%
over 20	%	%

FILTER CHARACTERISTICS

Filtering Velocity (acfm/ft^2 of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
5.0	5	8	191	One

Bag rows will be:	Walkways will be provided between banks of bags:
Staggered (Straight)	Yes (No)

Filtering Material: Polyester

Describe Bag Cleaning Method and Cycle: Reverse pulse jets of high pressure air with adjustable cycle.

ADDITIONAL INFORMATION

August 26, 1986

ATTACHMENT VI

GENERAL PORTLAND INC.
TAMPA PLANT
FABRIC FILTERS

Point Number (from Flow Diagram)	Manufacturer & Model No. (if available)
Location No. 50	Industrial Filter Model AA-1010 or Equal
Name of Abatement Device	**Type of Particulate Controlled**
Dust Collector	Portland Cement Dust

GAS STREAM CHARACTERISTICS

Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
4,000	4,000	Ambient	8	0.02

Pressure Drop (in. H_2O)	Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp)	Fan Requirements (ft^3/min)
8	Ambient	15	4,000

PARTICULATE DISTRIBUTION
(By Weight)

Micron Range	Inlet	Outlet
0.0-0.5	%	%
0.5-1.0	%	%
1.0-5.0	%	%
5-10	%	%
10-20	%	%
over 20	%	%

FILTER CHARACTERISTICS

Filtering Velocity (acfm/ft^2 of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
4.0	5	8	96	One

Bag rows will be:	Walkways will be provided between banks of bags:
Staggered (Straight)	Yes (No)

Filtering Material: Polyester

Describe Bag Cleaning Method and Cycle: Reverse pulse jets of high pressure air with adjustable cycle.

ADDITIONAL INFORMATION

August 26, 1986

ATTACHMENT VI

GENERAL PORTLAND INC.
TAMPA PLANT
FABRIC FILTERS

Point Number (from Flow Diagram)	Manufacturer & Model No. (if available)
Location No. 51	Industrial Filter Model AA-1015 or Equal
Name of Abatement Device	**Type of Particulate Controlled**
Dust Collector	Portland Cement Dust

GAS STREAM CHARACTERISTICS

Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
7,000	7,000	Ambient	8	0.02

Pressure Drop (in. H_2O)	Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp)	Fan Requirements (ft^3/min)
8	Ambient	25	7,000

PARTICULATE DISTRIBUTION
(By Weight)

Micron Range	Inlet	Outlet
0.0-0.5	%	%
0.5-1.0	%	%
1.0-5.0	%	%
5-10	%	%
10-20	%	%
over 20	%	%

FILTER CHARACTERISTICS

Filtering Velocity (acfm/ft^2 of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
4.67	5	8	143	One

Bag rows will be:		Walkways will be provided between banks of bags:	
Staggered	(Straight)	Yes	(No)

Filtering Material: Polyester

Describe Bag Cleaning Method and Cycle: Reverse pulse jets of high pressure air with adjustable cycle.

ADDITIONAL INFORMATION

August 26, 1986

ATTACHMENT VI

GENERAL PORTLAND INC.
TAMPA PLANT
FABRIC FILTERS

Point Number (from Flow Diagram)	Manufacturer & Model No. (if available)
Location No. 52	Industrial Filter Model AA-1015 or Equal
Name of Abatement Device	**Type of Particulate Controlled**
Dust Collector	Portland Cement Dust

GAS STREAM CHARACTERISTICS

Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
7,000	7,000	Ambient	8	0.02

Pressure Drop (in. H_2O)	Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp)	Fan Requirements (ft^3/min)
8	Ambient	25	7,000

PARTICULATE DISTRIBUTION
(By Weight)

Micron Range	Inlet	Outlet
0.0-0.5	%	%
0.5-1.0	%	%
1.0-5.0	%	%
5-10	%	%
10-20	%	%
over 20	%	%

FILTER CHARACTERISTICS

Filtering Velocity (acfm/ft^2 of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
4.76	5	8	143	One

Bag rows will be:	Walkways will be provided between banks of bags:
Staggered (Straight)	Yes (No)

Filtering Material: Polyester

Describe Bag Cleaning Method and Cycle: Reverse pulse jets of high pressure air with adjustable cycle.

ADDITIONAL INFORMATION