DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

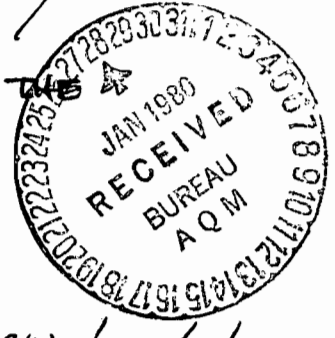
ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION) ~~L. Smallwood~~	INITIAL	
	DATE	
2. ~~Larry George~~	INITIAL	
	DATE	
3. ~~Britt Thomas~~ BT	INITIAL	
	DATE	
4. Willard (See discussion of NOx control)	INITIAL	
	DATE	

REMARKS: ~~Mark Asbel~~

THEN TO THE FILES.



Review! Lets discuss

INFORMATION
- REVIEW & RETURN
- REVIEW & FILE
- INITIAL & FORWARD

DISPOSITION
- REVIEW & RESPOND
- PREPARE RESPONSE
- FOR MY SIGNATURE
- FOR YOUR SIGNATURE
- LET'S DISCUSS
- SET UP MEETING
- INVESTIGATE & REPT
- INITIAL & FORWARD
- DISTRIBUTE
- CONCURRENCE
- FOR PROCESSING
- INITIAL & RETURN

SJM 1-28

FROM: BT

DATE 1/28/80

PHONE

PSD-FL-0028

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30308

JAN 22 1980

REF: 4AH-AF

Mr. Steve Smallwood, Chief
Bureau of Air Quality Management
Division of Environmental Programs
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Re: Lonestar Kiln #4
PSD-FL-028

Dear Mr. Smallwood:

Enclosed for your review and comment are the Public Notice and Preliminary PSD Determination for Lonestar Florida Pennsuco, Inc.'s proposed kiln #4 in Dade County Florida. The public notice will appear in a local newspaper, The Miami Herald, in the near future.

Please let my office know if you have comments or questions regarding this determination. You may contact Kent Williams of my staff at 404/881-4552 or Jeffrey L. Shumaker of TRW Inc. at 919/541-9100. TRW Inc. is under contract to EPA, and TRW personnel are acting as authorized representatives of the Agency in providing aid to the Region IV PSD review program.

Sincerely,

Tommie A. Gibbs

Tommie A. Gibbs, Chief
Air Facilities Branch

TAG:JLS:jt

Enclosure

PSD-FL-028

Preliminary Determination Summary

I. Applicant

Lonestar Florida Pennsuco, Inc.
Cement and Aggregate Division
P. O. Box 122035
Palm Village Station
Hialeah, Florida 33012

II. Location

The proposed modification is located at the applicant's existing Portland Cement Plant at 11,000 N.W. 121 Street, Hialeah in Dade County, Florida. The UTM coordinates are 17-562.720 East and 17-2861.650 North.

III. Project Description

The applicant proposes to modify the existing source to expand cement manufacturing capacity by about 2000 tons per day of product through construction of a fourth production unit. The facilities making up this unit include a kiln, a clinker cooler, a finishing mill and associated conveying, processing and materials handling equipment. From these production facilities there are a total of 24 emission points as are listed in Table I.

IV. Source Impact Analysis

The proposed modification to the Portland Cement Plant increases the source's potential to emit particulate matter (TSP) and nitrogen oxide (NO_2) by greater than 100 tons per year as shown in Table II. Therefore, in accordance with Federal Prevention of Significant Deterioration (PSD) regulations (40 CFR 52.21, Paragraphs (b) and (i)) the proposed construction is a "major modification" as defined in the regulations and required to undergo PSD review. Furthermore, allowable emissions from this modification exceed 50 tons per year so that PSD review includes analyses of the following:

a) Best Available Control Technology (BACT),
b) Increment Impact,
c) National Ambient Air Quality Standards Impact,
d) Class I Area Impact,
e) Soils, Vegetation, and Visibility Impacts, and
f) Growth Impacts.

TABLE I

EMITTING FACILITIES

EMISSIONS AND BACT

Source Name	Name of Contaminant	Potential Emissions (T/yr)	Control Technology	Emissions		Opacity Standard
				Maximum (lb/hr)	Allowable (T/yr)	
Kiln #4	Particulates	88,673	Electrostatic Precipitator (99.97% Eff.)	28.7	125.5	10%
	Gas Fired:*					
	Sulfur Dioxide	78.4	N/A	14.6	62.4	N/A
	Nitrogen Oxides	2,413	Low Excess Air	565	2,413	N/A
	Hydrocarbons	6.3	N/A	1.5	6.3	N/A
	Carbon Monoxide	36	N/A	8.4	36	N/A
	Oil Fired:*					
	Sulfur Dioxide	18.6	N/A	23.2	2.5	N/A
	Nitrogen Oxides	41	Low Excess Air	374	41	N/A
	Hydrocarbons	0.36	N/A	3.3	0.36	N/A
	Carbon Monoxide	1.8	N/A	16.4	1.8	N/A
Clinker Cooler #4	Particulates	12,445	Fabric Filter (99.9% Eff.)	14.3	62.6	10%
Raw Rail Unload	Particulates	1,490	Fabric Filter	0.34	1.49	10%
Transfer (Raw)	Particulates	570	Fabric Filter	0.13	0.57	10%
Raw Silo	Particulates	1,140	Fabric Filter	0.26	1.14	10%
Surge Bin	Particulates	1,140	Fabric Filter	0.26	1.14	10%
Dust Bin	Particulates	740	Fabric Filter	0.17	0.74	10%
Clinker Drop Out	Particulates	1,880	Fabric Filter	0.43	1.88	10%
Clinker Handling	Particulates	3,370	Fabric Filter	0.77	3.37	10%
Clinker Silos	Particulates	2,540	Fabric Filter	0.58	2.54	10%

*Gas fired 97.5% of the time (8541 hrs/yr); oil fired not more than 2.5% of the time (219 hrs/yr).

TABLE I
(Continued)

Source Name	Name of Contaminant	Potential Emissions (T/yr)	Control Technology	Emissions		Opacity Standard
				Maximum (lb/hr)	Allowable (T/yr)	
Cement Silos Alleviator	Particulates	5,825	Fabric Filter	1.33	5.8	5%
Elevator Top Cement Silo	Particulates	2,059	Fabric Filter	0.47	2.1	5%
Rail Loadout	Particulates	920	Fabric Filter	0.21	0.9	5%
Truck Loadout 1	Particulates	920	Fabric Filter	0.21	0.9	5%
Truck Loadout 2	Particulates	920	Fabric Filter	0.21	0.9	5%
Air Slide - Cement	Particulates	263	Fabric Filter	0.06	0.3	5%
Air Slide - Masonry	Particulates	263	Fabric Filter	0.06	0.3	5%
Cement Bagging	Particulates	5,212	Fabric Filter	1.19	5.2	5%
Masonry Bagging	Particulates	5,212	Fabric Filter	1.19	5.2	5%
Finish Mill #4	Particulates	10,100	Fabric Filter	2.57	11.26	5%
Finish Mill #4 Aux.	Particulates	5,738	Fabric Filter	1.46	6.39	5%
Clinker Silo Belt 1	Particulates	3,022	Fabric Filter	0.69	3.02	5%
Clinker Silo Belt 2	Particulates	3,022	Fabric Filter	0.69	3.02	5%
Clinker Silo Belt 3	Particulates	1,489	Fabric Filter	0.34	1.49	5%

TABLE II

	TSP	NO_2[a]	SO_2	HC	CO
Potential Emissions[b] (Tons/Year)	158,953	2,454[c]	97[d]	6.6	38
Allowable Emissions (Tons/Year)	245	2,454	(e)	(e)	(e)

a. All nitrogen oxides emitted by the source are assumed to oxidize to NO_2.

b. Estimated in the application or from information in the application based on maximum capacity operation without controls.

c. Assumes 100% gas firing.

d. Assumes 97.5% natural gas firing, and 2.5% fuel oil firing as stated in the application and required as a permit condition.

e. Potential emissions of these pollutants are less than 100 tons per year; therefore, PSD review does not apply.

It should be noted that construction of this modification commenced in 1973 prior to promulgation of federal PSD regulations when the source was owned and operated by Maule Industries. For this reason, the modification was not subject to 40 CFR 52.21 as in effect prior to March 1, 1978. However, construction ceased for a period exceeding 18 months beginning in April of 1975. Therefore, the modification does not meet the exemption criteria of Paragraph (i) Part (3) and the modification is subject to the current regulation.

Another noteworthy point is that the area in which the modification will be located is non-attainment for photochemical oxidants. However, this has no direct result on the review for this modification because potential emissions of HC (6.6 T/Y) are less than 100 tons per year and are not subject to New Source Review requirements of the emissions offset interpretative ruling.

A. BACT Analysis

The allowable emissions of TSP and NO_x exceed 50 tons per year as shown in Table II. Therefore, BACT is required for all facilities emitting TSP and NO_x consistent with Paragraph (j) of the PSD regulation. This includes all facilities listed in Table I.

The applicant has analyzed available alternatives for controlling emissions of TSP and proposes the use of enclosures vented to fabric filters (baghouses) for materials handling facilities, an electrostatic precipitator (ESP) for the kiln exhaust and a baghouse for the Clinker Cooler exhaust. The technical analysis considered the high degree of abatement achievable with these controls: 99.8% control of kiln's emissions, 99.5% of Clinker Cooler emissions and 99.9% of materials handling emissions. Another significant consideration was the economic penalty that is incurred if controls other than those originally designed into the modification are used. The ESP and most of the baghouses were acquired under previous ownership and are currently on site. Further, the proposed controls will achieve the emission limits specified in the New Source Performance Standard (NSPS) for Portland Cement Plants.

Most importantly, these control devices are capable of meeting the TSP emissions limits required by the State Department of Environmental Regulations (DER) based on vendor guarantees for these specific systems. The various limits are summarized as follows:

	NSPS Limits		DER Limits	
Facility	lb/dry ton*	Opacity	lb/dry ton*	Opacity
Kiln	0.3	20%	0.2	10%
Clinker Cooler	0.1	10%	0.1	10%
All Other	---	10%	---	5%

*Per dry ton of feed to the kiln.

The PSD regulations require the Best Available Control Technology determined on a case by case basis. Therefore, the allowable TSP emissions limits are the limits justified in DER's control technology analysis. Further requirements are that the baghouses for materials handling sources will have air to cloth ratios not to exceed 6:1 and will achieve an outlet grainloading not to exceed 0.01 grains/ACFM. The control strategies and allowable emissions rates for each TSP emitting facility are outlined in Table I. Outlet concentrations specified by the applicant should also meet the opacity standards set for the emitting facilities with the exception of the kiln which is required to meet an allowable emissions limit which is tighter than that proposed by the applicant, as discussed previously.

BACT for emissions of NO_2 is also required for this modification. The kiln is the only facility which emits NO_2. The applicant considered several technologies for controlling these emissions, but no feasible technology was found. An alternative, lower NO_2 emitting, dry production process was considered, but rejected on economic grounds due to capital loss which would be incurred in abandoning the existing, partially constructed, wet processing equipment. The use of low NO_x burners and low excess air firing as techniques to control NO_x were found not to be in use in cement manufacturing. Further, the feasibility of direct transfer of this technology is questionable due to the sensitivity of product quality to changes in the kiln flame. Therefore, the applicant proposed no controls for NO_2 and an emissions limit of 565 pounds per hour (approximately 6.2 lb/ton cement produced based on test results from a similar kiln).

It is well documented in several EPA publications that little is known of NO_x control technologies for cement kilns; however, the proposed emission limit (6.2 lb/ton cement) is over two times the AP-42 factor for uncontrolled NO_x emissions from cement manufacturing (2.6 pounds per ton cement). Considering this, the position of "no controls" is unacceptable as BACT for NO_x. Instead, the applicant is required to use low excess air firing to minimize NO_x formation from the kiln to the greatest possible extend without incurring unacceptable product deterioration. This will be accomplished through maintaining optimum combustion parameters to minimize NO_x formation with the use of a flue gas oxygen monitor. Performance tests in accordance with the attached general provisions will be conducted to calibrate the oxygen meter and thus control NO_x emissions.

It should be noted that the combustion air temperature can be adjusted to help maintain satisfactory kiln temperature while operating under low excess air firing conditions. However, if this technique is to be used, it should be used during testing to calibrate the flue gas oxygen monitor and testing to determine compliance with the allowable emissions limit.

When considering the allowable NO_x emissions limit, it was found that insufficient justification exists to set an NO_x limit at the AP-42 quantity of 2.6 pounds per ton. For instance, the emissions estimates published in another EPA report* indicate a higher uncontrolled rate of roughly 17 lb/ton (1319 ng/J or 2250 ppm) and a controlled rate of roughly 14 lb/ton (14% reduction). For this reason, the allowable emissions limit proposed by the applicant is acceptable. However, the 565 pound per hour limit for gas firing and the 374 pound per hour limit for oil firing represent only absolute maximums and the requirement to minimize NO_x formation through controlling combustion conditions is not altered.

B. Air Quality Impact Analysis

The applicant is required to demonstrate that the proposed modification will not cause a violation of the TSP and NO_2 allowable increments as outlined in 40 CFR 52.21 (c) and the National Ambient Air Quality Standards (NAAQS). To accomplish this, a modeling analysis was performed using maximum emission rates, five years of meteorological data for the Miami area obtained from the National Climatic Center in Asheville, North Carolina, and EPA approved air quality models as follows:

AQDM for Annual Average Concentrations;

CRSTER for Preliminary Short Term Average Concentrations, Worst Day Meteorology, and Impact Areas, and

PTMTPW for 24-Hour Average Concentrations.

The CRSTER model was used to determine which of the days in the five year period produced the maximum local ambient concentrations. The meteorological conditions for these days were then used in subsequent AQDM runs to determine maximum 24-hour concentrations.

*Control Techniques for Nitrogen Oxides Emissions from Stationary Sources, Second Edition, EPA-450/1-78-001, January 1978.

The modification's impact area is slightly less than four kilometers as determined by the CRSTER model results. Other modeling analysis results pertinent to the PSD review are summarized in Table III.

Results of the NO_2 analysis show the maximum yearly average ambient concentration due to the new facilities to be 0.4 ug/m^3. This value is less than the significance level outlined in the preamble to the PSD regulations (1 ug/m^3) and the proposed modification therefore is considered not to significantly impact the ambient concentration of NO_2 and not to cause or contribute to a violation of the NAAQS for NO_2. Further, because of this insignificant impact, ambient monitoring data was not required for NO_2.

Increment Analysis

The applicant demonstrated that the proposed modification will not violate allowable TSP increment levels as outlined in Paragraph (c) of the PSD regulations (40 CFR 52.21). The modeling analysis results include contributions from the proposed new sources and 14 other increment consuming sources in the vicinity of the Lonestar plant. To identify increment consuming sources the applicant reviewed state air permit files in the Florida Department of Environmental Regulation (DER) West Palm Beach office. The sources considered include all increment consuming sources within a 15 kilometer radius of the proposed facilities and all increment consuming sources within 50 kilometers with a significant impact within the modification's impact area (4 km radius) which could be identified from the DER files. Of the additional 14 sources, three distant sources were not modeled for the 24-hour average concentration because they do not significantly impact the area surrounding the proposed modification on a short term basis. All modeled emission rates were maximum hourly or yearly allowable limits contained in the state operating permit. The maximum annual and 24-hour average increment consumed within the impact area of this modification is displayed along with the allowable increment levels in Table IV. Review of this table shows that the proposed modification consumes less than 25% of the 24-hour and annual allowable increment levels. Further, the aggregate contributions from all increment consuming sources consume less than 50% of the available increment levels within the proposed modification's impact area. On the basis of these results, it is concluded that no increment violations will result from construction of the proposed modification.

TABLE III

MODELING RESULTS

	TSP (ug/m^3)		NO_2 (ug/m^3)
	Maximum Annual Average Concentration (AQDM)	Highest, 2nd Highest 24-Hour Average Concentration (PTMTPW)	Maximum Annual Average Concentration
Proposed Modification	2.3	8.7	0.4
Proposed Modification and all Increment Consuming Sources	8.6	11[a]	b

a. Several wind direction scenarios were modeled to determine the maximum synergistic effect from proposed sources and other nearby increment consuming sources. ?

b. This concentration is not needed because an increment analysis for NO_2 is not required.

NAAQS Analysis

To assess the modification's impact on NAAQS, the maximum impacts from the modeling analysis were added to existing ambient concentrations, as estimated with representative monitoring data, and compared to the maximum concentrations allowed by the standard. Monitoring data was evaluated from all TSP sampling sites in the vicinity of the plant. Data from the closest monitoring station to the proposed modification was selected as being most representative of the existing ambient air quality. Selection of this monitor also is supported by modeling results which show the monitor to be located in roughly the same direction from the plant as the point of maximum annual impact. Further, the monitor is adjacent to the predicted point of maximum increment consumption from the proposed and existing sources.

The monitoring data from this station is presented in Table V along with appropriate modeling results for comparison with the NAAQS levels. Inspection of this table shows that the maximum concentration from the proposed modification modeled in conjunction with emissions from all existing nearby sources (~6 km radius) 24-hour and annual monitored concentrations do not exceed the TSP NAAQS ceilings. The analysis is quite conservative because contributions from existing sources are counted twice, once in the modeling analysis and once in the monitoring data.

On the basis of the analysis and the results presented in Table V, the proposed modification is determined not to cause or contribute significantly to a violation of the NAAQS for TSP.

C. Class I Area Impact

The proposed modification plans to locate about 30 kilometers from the Everglades National Park. For this reason, the source's impact on this Class I area was estimated using the EPA approved CRSTER model. Maximum 24-hour and annual average impacts were determined to be 1 ug/m^3 and less than 1 ug/m^3 respectively. These compare as follows to the TSP Class I area allowable increments and significance levels outlined in the PSD regulations:

TABLE IV

INCREMENT ANALYSIS RESULTS

	Maximum Impact From Proposed Modification	Maximum Impact From Proposed Modification Plus Other Increment Consuming Sources	Available Increment	Percent Increment Consumed by Proposed Modification	Percent Total Consumed Increment (All Sources)
Annual Geometric Mean ug/m^3	2.3	8.7	19	12%	46%
24 Hour Average[a] (ug/m^3)	8.7	11	35[b]	25%	31%

a. Highest, 2nd highest concentration or standard which can be exceeded once per year.

b. Maximum available increment is limited by NAAQS ceiling (B-A) = 150 - 115 = 35 ug/m^3 which is less than the standard 37 ug/m^3 increment allowed where the NAAQS level does not exceed limit available increment.

TABLE V

NAAQS ANALYSIS RESULTS

	A Existing Ambient Background[a]	Maximum Impact From Proposed Modification	Maximum Impact From Proposed Modification Plus Other Increment Consuming Sources[b]	B Maximum Concentration Within New Source's Impact Area From All Existing Sources	A+B Existing Ambient Plus Maximum Modeled Results[c]	TSP NAAQS (Ceiling)
Annual Average Concentration (ug/m^3)	51	2.3	8.6	11	62	75
Maximum 24-Hour Average Concentration[d] (ug/m^3)	115	8.7	11	33	148	150

whoops!

a. 1978 ambient monitoring data from Dade County Station Number 34 (state identification number 10-0860-019).

b. These concentrations include all new sources since August 7, 1977 and major sources since January 1, 1975.

c. This maximum concentration is conservative because contributions from all existing sources are counted twice, once by the monitor and once by modeling results.

d. Highest, second highest concentration, or standards not to be exceeded more than once per year.

	Maximum Modeled TSP Impacts	TSP Significance Levels	TSP Class I Increments
Annual Average ug/m^3	< 1	1	5
24-Hour Average ug/m^3	1	5	10

Review of this table shows that CRSTER model results show impacts on the Class I to be less than the defined significance levels. On this basis, it is concluded that the proposed modification will not cause a significant adverse impact on the Class I area.

D. Soils, Vegetation and Visibility Impacts

The area surrounding the plant site contains vegetation which is believed not to be of significant commercial or recreational value. The soil is primarily peat and muck to a depth of about 36 inches. No significant adverse impact on soils or vegetation is expected to result from deposition of TSP or other emissions from the proposed facility.

The Dade County Region surrounding the plant is high in relative humidity. This natural condition limits local visibility to a certain extent. In addition, there is a sizeable amount of atmospheric pollutants emitted from existing anthroprogenic sources. For these reasons, and because the proposed modification will incorporate BACT for TSP, there is no significant adverse visibility impact anticipated from construction of the proposed facilities.

E. Growth Impact

The potential for general industrial expansion in Dade County is not significantly impacted by the proposed modification. This is true even though emissions from existing industry contribute heavily to areas in which the ambient TSP concentrations nearly exceed NAAQS levels. This existing situation is evidenced by modeling analyses performed by the applicant. However, the areas in which the NAAQS may be threatened lie beyond the distance where the

proposed modification significantly impacts ambient air concentrations. Within the impact area of the proposed modification, the increment and NAAQS are not threatened, and as the increment analysis shows, greater than 50% of the increment remains available for future growth.

The expanded cement manufacturing capacity of the plant may affect growth in the area by increasing the available supply of cement construction materials to private and industrial contractors. This point was not addressed by the applicant, but it is not expected to be significant due to the many other growth constraining factors such as air quality levels, water quality levels, available water supply, available transportation, available labor, etc.

V. Conclusions

EPA Region IV proposes a Preliminary Determination of approval with conditions for the construction of the kiln, clinker cooler and associated production facilities described in the Lonestar Florida/Pennsuoc application received by EPA on June 15, 1979. This approval is based on information contained in the application and in subsequent correspondence from the applicant dated September 10, 1979 and October 22, 1979. The conditions set forth in the permit are as follows:

1. The modification will be constructed in accordance with the specifications, capacities, and descriptions contained in the application except as otherwise required by the permit conditions.
2. The allowable emissions limits for TSP are as follows:

Facility	TSP Emissions Limit	Opacity Standard
Kiln	0.2 pound/ton*	10%
Clinker Cooler	0.1 pound/ton*	10%
All Other TSP Emitting Facilities	0.01 grain/ACFM	5%

*Emissions limits for the kiln and clinker cooler are in pounds per ton of dry raw materials fed to the kiln.

3. The production rate and the raw materials feed rate to the kiln will be recorded on a daily basis consistent with the requirements of 40 CFR 60.63.
4. The allowable emissions limit for NO_2 (NO_x as NO_2) from the kiln is 565 pounds per hour for gas firing and 374 pounds per hour for oil firing.
5. To determine compliance with the allowable emissions limits, performance tests will be performed within 90 days of plant startup and each time fuel switching occurs. The results of these tests will be reported to EPA Region IV within 90 days of test completion. Operation during these tests will be within 10% of rated maximum capacity. Tests will be conducted with EPA standard methods and in accordance with the applicable provisions of 40 CFR 60.8 and 60.64. The minimum sample times and sample volumes for TSP and NO_2 tests are as follows:

Facility	Pollutant	Standard Method	Sample Periods	Sample Volumes
Kiln	TSP	Method 5	60 minutes	30 DSCF
	NO_x	Method 7	4 grab samples at 15-minute intervals	--
Clinker Cooler	TSP	Method 5	60 minutes	40.6 DSCF

6. Actual emissions of NO_2 from the kiln will be minimized through use of low excess air firing conditions. A flue gas oxygen meter will be installed, calibrated and operated in accordance with the attached General Provision "Use of a Flue Gas Oxygen Meter as BACT for Combustion Controls".
7. Fuel oil fired operation of the kiln will not exceed 219 hours per year. Records will be kept of fuel usage to determine compliance with this requirement. In addition, the sulfur content of all oil fired will be determined and recorded. Such records will be maintained and available for inspection for a period of not less than two years. Fuel oil firing exceeding 219 hours per year constitutes "excess emissions" in violation of the permit and must be reported to EPA Region IV within 48 hours of occurrence.

8. The applicant will comply with the provisions and requirements of the attached general conditions.

USE OF FLUE GAS OXYGEN METER AS BACT FOR COMBUSTION CONTROLS

Within 90 days of attaining full operation of the combustion unit the owner will conduct performance tests in accordance with approved EPA methods as described in 40 CFR Part 60.

Such performance tests will be conducted at two levels of operation of the boiler or heater:

1) Full load, and
2) Normal operational load.

Results of stack testing (performance tests) will be correlated to the flue gas oxygen monitor and the following points will be determined with regard to the "% O_2" content of the flue gas:

1) The point at which NO_x emission (lb/MMBTU) equals the allowable NO_x emission rate contained in the permit or the appropriate emission factor found in the latest edition of AP-42, "Compilation of Air Pollution Emission Factors" whichever is lower; and
2) The point at which CO emission exceeds either the allowable CO emission rate contained in the permit or the applicable CO emission factor found in AP-42 "Compilation of Air Pollution Emission Factors", whichever is lower; or
3) The point at which product quality becomes unacceptable.

The combustion unit flue gas oxygen content will be maintained between these points and alarms will be set to sound when F.G. oxygen levels exceed either side of this range. Any operation outside of this range will constitute "excess emissions" of the applicable pollutant.

Should any combustion equipment modifications be made to the combustion unit such as different type burners, combustion air relocation, fuel conversion, tube removal or addition, etc., performance tests as described above shall be conducted within 90 days of attaining full operation after such modification. Results of all performance tests shall be sent to the Regional Administrator within 90 days after completion of the tests.

GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.

2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.

3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.

4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.

5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:

   (a) description of noncomplying emission(s),

   (b) cause of noncompliance,

   (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,

   (d) steps taken by the permittee to reduce and eliminate the noncomplying emission,

   and

   (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

   Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.

7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.

8. The permittee shall allow representatives of the State environmental control agency or representatives of the Environmental Protection Agency, upon the the presentation of credentials:

   (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;

   (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;

   (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

   (d) to sample at reasonable times any emission of pollutants;

   and

   (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

   Chief, Air Facilities Branch
   Air and Hazardous Materials Division
   U.S. Environmental Protection Agency
   Region IV
   345 Courtland Street
   Atlanta, Georgia 30308

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

PUBLIC NOTICE

A new air pollution source is proposed for construction by Lonestar Florida Pennsuco near the city of Hialeah in Dade County, Florida. The source is a new cement kiln (#4) of 2000 tons per day capacity and associated processing equipment.

The proposed construction has been reviewed by the U. S. Environmental Protection Agency (EPA) under Federal Prevention of Significant Deterioration (PSD) Regulations (40 CFR 52.21), and EPA has made a Preliminary Determination that the construction can be approved provided certain conditions are met. A summary of the basis for this determination and the application for a permit submitted by Lonestar are available for public review in the Dade County Environmental Resources Management Office in the Brickwell Plaza Building, Suite 402, 909 Southeast 1st Avenue, Miami, Florida.

The maximum emissions of the various pollutants emitted by this kiln are as follows in tons per year.

TSP	NO_x	SO_2	CO	HC
245	2454	<100	<100	<100

Further, the maximum allowable particulate (TSP) increment consumed by the kiln and collective sources in the area are as follows in percent.

	Annual Geometric Mean	24-Hour Average
TSP Kiln	12%	25%
TSP All Sources	46%	31%

Moreover, the kiln will have a small finite impact on the Everglades National Park Class I area; however, this impact is the first known increment impact on the Class I area and the impact is less than the significance levels defined by EPA (1 ug/m^3-annual and 5 ug/m^3-24 hour). Therefore, a detailed Class I area impact analysis was not required by EPA.

Finally, any person may submit written comments to EPA regarding the proposed modification. All comments, postmarked not later than 30 days from the date of this notice, will be considered by EPA in making a Final Determination regarding approval for construction of this source. These comments will be made available for public review at the above location. Furthermore, a public hearing can be requested by any person. Such requests should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. Tommie A. Gibbs, Chief
Air Facilities Branch
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30308

PSD-FL-028

Final Determination

PSD - FL - 0028
LONESTAR, CEMENT
HIALEAH

I. Applicant

Lonestar Florida Pennsuco, Inc.
Cement and Aggregate Division
P. O. Box 122035
Palm Village Station
Hialeah, Florida 33012

II. Location

The proposed modification is located at the applicant's existing Portland Cement Plant at 11,000 N.W. 121 Street, Hialeah in Dade County, Florida. The UTM coordinates are 17-562.720 East and 17-2861.650 North.

III. Project Description

The applicant proposes to modify the existing source to expand cement manufacturing capacity by about 2000 tons per day of product through construction of a fourth production unit. The facilities making up this unit include a kiln, a clinker cooler, a finishing mill and associated conveying, processing and materials handling equipment. From these production facilities there are a total of 24 emission points as are listed in Table I.

IV. Source Impact Analysis

The proposed modification to the Portland Cement Plant increases the source's potential to emit particulate matter (TSP) and nitrogen oxide (NO_2) by greater than 100 tons per year as shown in Table II. Therefore, in accordance with Federal Prevention of Significant Deterioration (PSD) regulations (40 CFR 52.21, Paragraphs (b) and (i)) the proposed construction is a "major modification" as defined in the regulations and required to undergo PSD review. Furthermore, allowable emissions from this modification exceed 50 tons per year so that PSD review includes analyses of the following:

a) Best Available Control Technology (BACT),
b) Increment Impact,
c) National Ambient Air Quality Standards Impact,
d) Class I Area Impact,
e) Soils, Vegetation, and Visibility Impacts, and
f) Growth Impacts.

TABLE I

EMITTING FACILITIES

EMISSIONS AND BACT

Source Name	Name of Contaminant	Potential Emissions (T/yr)	Control Technology	Emissions		Opacity Standard
				Maximum (lb/hr)	Allowable (T/yr)	
Kiln #4	Particulates	88,673	Electrostatic Precipitator (99.97% Eff.)	28.7	125.5	10%
	Gas Fired:*					
	Sulfur Dioxide	78.4	N/A	14.6	62.4	N/A
	Nitrogen Oxides	2,413	Low Excess Air	565	2,413	N/A
	Hydrocarbons	6.3	N/A	1.5	6.3	N/A
	Carbon Monoxide	36	N/A	8.4	36	N/A
	Oil Fired:*					
	Sulfur Dioxide	18.6	N/A	23.2	2.5	N/A
	Nitrogen Oxides	41	Low Excess Air	374	41	N/A
	Hydrocarbons	0.36	N/A	3.3	0.36	N/A
	Carbon Monoxide	1.8	N/A	16.4	1.8	N/A
Clinker Cooler #4	Particulates	12,445	Fabric Filter (99.9% Eff.)	14.3	62.6	10%
Raw Rail Unload	Particulates	1,490	Fabric Filter	0.34	1.49	10%
Transfer (Raw)	Particulates	570	Fabric Filter	0.13	0.57	10%
Raw Silo	Particulates	1,140	Fabric Filter	0.26	1.14	10%
Surge Bin	Particulates	1,140	Fabric Filter	0.26	1.14	10%
Dust Bin	Particulates	740	Fabric Filter	0.17	0.74	10%
Clinker Drop Out	Particulates	1,880	Fabric Filter	0.43	1.88	10%
Clinker Handling	Particulates	3,370	Fabric Filter	0.77	3.37	10%
Clinker Silos	Particulates	2,540	Fabric Filter	0.58	2.54	10%

*Gas fired 97.5% of the time (8541 hrs/yr); oil fired not more than 2.5% of the time (219 hrs/yr).

TABLE I
(Continued)

Source Name	Name of Contaminant	Potential Emissions (T/yr)	Control Technology	Emissions		Opacity Standard
				Maximum (lb/hr)	Allowable (T/yr)	
Cement Silos Alleviator	Particulates	5,825	Fabric Filter	1.33	5.8	5%
Elevator Top Cement Silo	Particulates	2,059	Fabric Filter	0.47	2.1	5%
Rail Loadout	Particulates	920	Fabric Filter	0.21	0.9	5%
Truck Loadout 1	Particulates	920	Fabric Filter	0.21	0.9	5%
Truck Loadout 2	Particulates	920	Fabric Filter	0.21	0.9	5%
Air Slide - Cement	Particulates	263	Fabric Filter	0.06	0.3	5%
Air Slide - Masonry	Particulates	263	Fabric Filter	0.06	0.3	5%
Cement Bagging	Particulates	5,212	Fabric Filter	1.19	5.2	5%
Masonry Bagging	Particulates	5,212	Fabric Filter	1.19	5.2	5%
Finish Mill #4	Particulates	10,100	Fabric Filter	2.57	11.26	5%
Finish Mill #4 Aux.	Particulates	5,738	Fabric Filter	1.46	6.39	5%
Clinker Silo Belt 1	Particulates	3,022	Fabric Filter	0.69	3.02	5%
Clinker Silo Belt 2	Particulates	3,022	Fabric Filter	0.69	3.02	5%
Clinker Silo Belt 3	Particulates	1,489	Fabric Filter	0.34	1.49	5%

TABLE II

	TSP	NO_2[a]	SO_2	HC	CO
Potential Emissions[b] (Tons/Year)	158,953	2,454[c]	97[d]	6.6	38
Allowable Emissions (Tons/Year)	245	2,454	(e)	(e)	(e)

a. All nitrogen oxides emitted by the source are assumed to oxidize to NO_2.

b. Estimated in the application or from information in the application based on maximum capacity operation without controls.

c. Assumes 100% gas firing.

d. Assumes 97.5% natural gas firing, and 2.5% fuel oil firing as stated in the application and required as a permit condition.

e. Potential emissions of these pollutants are less than 100 tons per year; therefore, PSD review does not apply.

It should be noted that construction of this modification commenced in 1973 prior to promulgation of federal PSD regulations when the source was owned and operated by Maule Industries. For this reason, the modification was not subject to 40 CFR 52.21 as in effect prior to March 1, 1978. However, construction ceased for a period exceeding 18 months beginning in April of 1975. Therefore, the modification does not meet the exemption criteria of Paragraph (i) Part (3) and the modification is subject to the current regulation.

Another noteworthy point is that the area in which the modification will be located is non-attainment for photochemical oxidants. However, this has no direct result on the review for this modification because potential emissions of HC (6.6 T/Y) are less than 100 tons per year and are not subject to New Source Review requirements of the emissions offset interpretative ruling.

A. BACT Analysis

The allowable emissions of TSP and NO_x exceed 50 tons per year as shown in Table II. Therefore, BACT is required for all facilities emitting TSP and NO_x consistent with Paragraph (j) of the PSD regulation. This includes all facilities listed in Table I.

The applicant has analyzed available alternatives for controlling emissions of TSP and proposes the use of enclosures vented to fabric filters (baghouses) for materials handling facilities, an electrostatic precipitator (ESP) for the kiln exhaust and a baghouse for the Clinker Cooler exhaust. The technical analysis considered the high degree of abatement achievable with these controls: 99.8% control of kiln's emissions, 99.5% of Clinker Cooler emissions and 99.9% of materials handling emissions. Another significant consideration was the economic penalty that is incurred if controls other than those originally designed into the modification are used. The ESP and most of the baghouses were acquired under previous ownership and are currently on site. Further, the proposed controls will achieve the emission limits specified in the New Source Performance Standard (NSPS) for Portland Cement Plants.

Most importantly, these control devices are capable of meeting the TSP emissions limits required by the State Department of Environmental Regulations (DER) based on vendor guarantees for these specific systems. The various limits are summarized as follows:

	NSPS Limits		DER Limits	
Facility	lb/dry ton*	Opacity	lb/dry ton*	Opacity
Kiln	0.3	20%	0.2	10%
Clinker Cooler	0.1	10%	0.1	10%
All Other	---	10%	---	5%

*Per dry ton of feed to the kiln.

The PSD regulations require the Best Available Control Technology determined on a case by case basis. Therefore, the allowable TSP emissions limits are the limits justified in DER's control technology analysis. Further requirements are that the baghouses for materials handling sources will have air to cloth ratios not to exceed 6:1 and will achieve an outlet grainloading not to exceed 0.01 grains/ACFM. The control strategies and allowable emissions rates for each TSP emitting facility are outlined in Table I. Outlet concentrations specified by the applicant should also meet the opacity standards set for the emitting facilities with the exception of the kiln which is required to meet an allowable emissions limit which is tighter than that proposed by the applicant, as discussed previously.

BACT for emissions of NO_2 is also required for this modification. The kiln is the only facility which emits NO_2. The applicant considered several technologies for controlling these emissions, but no feasible technology was found. An alternative, lower NO_2 emitting, dry production process was considered, but rejected on economic grounds due to capital loss which would be incurred in abandoning the existing, partially constructed, wet processing equipment. The use of low NO_x burners and low excess air firing as techniques to control NO_x were found not to be in use in cement manufacturing. Further, the feasibility of direct transfer of this technology is questionable due to the sensitivity of product quality to changes in the kiln flame. Therefore, the applicant proposed no controls for NO_2 and an emissions limit of 565 pounds per hour (approximately 6.2 lb/ton cement produced based on test results from a similar kiln).

It is well documented in several EPA publications that little is known of NO_x control technologies for cement kilns; however, the proposed emission limit (6.2 lb/ton cement) is over two times the AP-42 factor for uncontrolled NO_x emissions from cement manufacturing (2.6 pounds per ton cement). Considering this, the position of "no controls" is unacceptable as BACT for NO_x. Instead, the applicant is required to use low excess air firing to minimize NO_x formation from the kiln to the greatest possible extend without incurring unacceptable product deterioration. This will be accomplished through maintaining optimum combustion parameters to minimize NO_x formation with the use of a flue gas oxygen monitor. Performance tests in accordance with the attached general provisions will be conducted to calibrate the oxygen meter and thus control NO_x emissions.

It should be noted that the combustion air temperature can be adjusted to help maintain satisfactory kiln temperature while operating under low excess air firing conditions. However, if this technique is to be used, it should be used during testing to calibrate the flue gas oxygen monitor and testing to determine compliance with the allowable emissions limit.

When considering the allowable NO_x emissions limit, it was found that insufficient justification exists to set an NO_x limit at the AP-42 quantity of 2.6 pounds per ton. For instance, the emissions estimates published in another EPA report* indicate a higher uncontrolled rate of roughly 17 lb/ton (1319 ng/J or 2250 ppm) and a controlled rate of roughly 14 lb/ton (14% reduction). For this reason, the allowable emissions limit proposed by the applicant is acceptable. However, the 565 pound per hour limit for gas firing and the 374 pound per hour limit for oil firing represent only absolute maximums and the requirement to minimize NO_x formation through controlling combustion conditions is not altered.

B. Air Quality Impact Analysis

The applicant is required to demonstrate that the proposed modification will not cause a violation of the TSP and NO_2 allowable increments as outlined in 40 CFR 52.21 (c) and the National Ambient Air Quality Standards (NAAQS). To accomplish this, a modeling analysis was performed using maximum emission rates, five years of meteorological data for the Miami area obtained from the National Climatic Center in Asheville, North Carolina, and EPA approved air quality models as follows:

AQDM for Annual Average Concentrations;

CRSTER for Preliminary Short Term Average Concentrations, Worst Day Meteorology, and Impact Areas, and

PTMTPW for 24-Hour Average Concentrations.

The CRSTER model was used to determine which of the days in the five year period produced the maximum local ambient concentrations. The meteorological conditions for these days were then used in subsequent AQDM runs to determine maximum 24-hour concentrations.

*Control Techniques for Nitrogen Oxides Emissions from Stationary Sources, Second Edition, EPA-450/1-78-001, January 1978.

The modification's impact area is slightly less than four kilometers as determined by the CRSTER model results. Other modeling analysis results pertinent to the PSD review are summarized in Table III.

Results of the NO_2 analysis show the maximum yearly average ambient concentration due to the new facilities to be 0.4 ug/m^3. This value is less than the significance level outlined in the preamble to the PSD regulations (1 ug/m^3) and the proposed modification therefore is considered not to significantly impact the ambient concentration of NO_2 and not to cause or contribute to a violation of the NAAQS for NO_2. Further, because of this insignificant impact, ambient monitoring data was not required for NO_2. ✓

Increment Analysis

The applicant demonstrated that the proposed modification will not violate allowable TSP increment levels as outlined in Paragraph (c) of the PSD regulations (40 CFR 52.21). The modeling analysis results include contributions from the proposed new sources and 14 other increment consuming sources in the vicinity of the Lonestar plant. To identify increment consuming sources the applicant reviewed state air permit files in the Florida Department of Environmental Regulation (DER) West Palm Beach office. The sources considered include all increment consuming sources within a 15 kilometer radius of the proposed facilities and all increment consuming sources within 50 kilometers with a significant impact within the modification's impact area (4 km radius) which could be identified from the DER files. Of the additional 14 sources, three distant sources were not modeled for the 24-hour average concentration because they do not significantly impact the area surrounding the proposed modification on a short term basis. All modeled emission rates were maximum hourly or yearly allowable limits contained in the state operating permit. The maximum annual and 24-hour average increment consumed within the impact area of this modification is displayed along with the allowable increment levels in Table IV. Review of this table shows that the proposed modification consumes less than 25% of the 24-hour and annual allowable increment levels. Further, the aggregate contributions from all increment consuming sources consume less than 50% of the available increment levels within the proposed modification's impact area. On the basis of these results, it is concluded that no increment violations will result from construction of the proposed modification.

TABLE III

MODELING RESULTS

	TSP (ug/m^3)		NO_2 (ug/m^3)
	Maximum Annual Average Concentration (AQDM)	Highest, 2nd Highest 24-Hour Average Concentration (PTMTPW)	Maximum Annual Average Concentration
Proposed Modification	2.3	8.7	0.4
Proposed Modification and all Increment Consuming Sources	8.6	11[a]	b

a. Several wind direction scenarios were modeled to determine the maximum synergistic effect from proposed sources and other nearby increment consuming sources.

b. This concentration is not needed because an increment analysis for NO_2 is not required.

NAAQS Analysis

To assess the modification's impact on NAAQS, the maximum impacts from the modeling analysis were added to existing ambient concentrations, as estimated with representative monitoring data, and compared to the maximum concentrations allowed by the standard. Monitoring data was evaluated from all TSP sampling sites in the vicinity of the plant. Data from the closest monitoring station to the proposed modification was selected as being most representative of the existing ambient air quality. Selection of this monitor also is supported by modeling results which show the monitor to be located in roughly the same direction from the plant as the point of maximum annual impact. Further, the monitor is adjacent to the predicted point of maximum increment consumption from the proposed and existing sources.

The monitoring data from this station is presented in Table V along with appropriate modeling results for comparison with the NAAQS levels. Inspection of this table shows that the maximum concentration from the proposed modification modeled in conjunction with emissions from all existing nearby sources (~6 km radius) 24-hour and annual monitored concentrations do not exceed the TSP NAAQS ceilings. The analysis is quite conservative because contributions from existing sources are counted twice, once in the modeling analysis and once in the monitoring data.

On the basis of the analysis and the results presented in Table V, the proposed modification is determined not to cause or contribute significantly to a violation of the NAAQS for TSP.

C. Class I Area Impact

The proposed modification plans to locate about 30 kilometers from the Everglades National Park. For this reason, the source's impact on this Class I area was estimated using the EPA approved CRSTER model. Maximum 24-hour and annual average impacts were determined to be 1 ug/m^3 and less than 1 ug/m^3, respectively. These compare as follows to the TSP Class I area allowable increments and significance levels outlined in the PSD regulations:

TABLE IV

INCREMENT ANALYSIS RESULTS

	Maximum Impact From Proposed Modification	Maximum Impact From Proposed Modification Plus Other Increment Consuming Sources	Available Increment	Percent Increment Consumed by Proposed Modification	Percent Total Consumed Increment (All Sources)
Annual Geometric Mean ug/m^3	2.3	8.7	19	12%	46%
24 Hour Average[a] (ug/m^3)	8.7	11	35[b]	25%	31%

a. Highest, 2nd highest concentration or standard which can be exceeded once per year.

b. Maximum available increment is limited by NAAQS ceiling (B-A) = 150 - 115 = 35 ug/m^3 which is less than the standard 37 ug/m^3 increment allowed where the NAAQS level does not exceed limit available increment.

proposed modification significantly impacts ambient air concentrations. Within the impact area of the proposed modification, the increment and NAAQS are not threatened, and as the increment analysis shows, greater than 50% of the increment remains available for future growth.

The expanded cement manufacturing capacity of the plant may affect growth in the area by increasing the available supply of cement construction materials to private and industrial contractors. This point was not addressed by the applicant, but it is not expected to be significant due to the many other growth constraining factors such as air quality levels, water quality levels, available water supply, available transportation, available labor, etc.

V. Conclusions

EPA Region IV proposes a Final Determination of approval with conditions for the construction of the kiln, clinker cooler and associated production facilities described in the Lonestar Florida/Pennsuoc application received by EPA on June 15, 1979. This approval is based on information contained in the application and in subsequent correspondence from the applicant dated September 10, 1979 and October 22, 1979. The conditions set forth in the permit are as follows:

1. The modification will be constructed in accordance with the specifications, capacities, and descriptions contained in the application except as otherwise required by the permit conditions.
2. The allowable emissions limits for TSP are as follows:

Facility	TSP Emissions Limit	Opacity Standard
Kiln	0.2 pound/ton*	10%
Clinker Cooler	0.1 pound/ton*	10%
All Other TSP Emitting Facilities	0.01 grain/ACFM	5%

*Emissions limits for the kiln and clinker cooler are in pounds per ton of dry raw materials fed to the kiln.

3. The production rate and the raw materials feed rate to the kiln will be recorded on a daily basis consistent with the requirements of 40 CFR 60.63.
4. The allowable emissions limit for NO_2 (NO_x as NO_2) from the kiln is 565 pounds per hour for gas firing and 374 pounds per hour for oil firing.
5. To determine compliance with the allowable emissions limits, performance tests will be performed within 90 days of plant startup and each time fuel switching occurs. The results of these tests will be reported to EPA Region IV within 90 days of test completion. Operation during these tests will be within 10% of rated maximum capacity. Tests will be conducted with EPA standard methods and in accordance with the applicable provisions of 40 CFR 60.8 and 60.64. The minimum sample times and sample volumes for TSP and NO_2 tests are as follows:

Facility	Pollutant	Standard Method	Sample Periods	Sample Volumes
Kiln	TSP	Method 5	60 minutes	30 DSCF
	NO_x	Method 7	4 grab samples at 15-minute intervals	--
Clinker Cooler	TSP	Method 5	60 minutes	40.6 DSCF

6. Actual emissions of NO_2 from the kiln will be minimized through use of low excess air firing conditions. A flue gas oxygen meter will be installed, calibrated and operated in accordance with the attached General Provision "Use of a Flue Gas Oxygen Meter as BACT for Combustion Controls".
7. Fuel oil fired operation of the kiln will not exceed 219 hours per year. Records will be kept of fuel usage to determine compliance with this requirement. In addition, the sulfur content of all oil fired will be determined and recorded. Such records will be maintained and available for inspection for a period of not less than two years. Fuel oil firing exceeding 219 hours per year constitutes "excess emissions" in violation of the permit and must be reported to EPA Region IV within 48 hours of occurrence.

8. The applicant will comply with the provisions and requirements of the attached general conditions.

USE OF FLUE GAS OXYGEN METER AS BACT FOR COMBUSTION CONTROLS

Within 90 days of attaining full operation of the combustion unit the owner will conduct performance tests in accordance with approved EPA methods as described in 40 CFR Part 60.

Such performance tests will be conducted at two levels of operation of the boiler or heater:

1) Full load, and
2) Normal operational load.

Results of stack testing (performance tests) will be correlated to the flue gas oxygen monitor and the following points will be determined with regard to the "% O_2" content of the flue gas:

1) The point at which NO_x emission (lb/MMBTU) equals the allowable NO_x emission rate contained in the permit or the appropriate emission factor found in the latest edition of AP-42, "Compilation of Air Pollution Emission Factors" whichever is lower; and
2) The point at which CO emission exceeds either the allowable CO emission rate contained in the permit or the applicable CO emission factor found in AP-42 "Compilation of Air Pollution Emission Factors", whichever is lower; or
3) The point at which product quality becomes unacceptable.

The combustion unit flue gas oxygen content will be maintained between these points and alarms will be set to sound when F.G. oxygen levels exceed either side of this range. Any operation outside of this range will constitute "excess emissions" of the applicable pollutant.

Should any combustion equipment modifications be made to the combustion unit such as different type burners, combustion air relocation, fuel conversion, tube removal or addition, etc., performance tests as described above shall be conducted within 90 days of attaining full operation after such modification. Results of all performance tests shall be sent to the Regional Administrator within 90 days after completion of the tests.

GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.

2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.

3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.

4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.

5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:

   (a) description of noncomplying emission(s),

   (b) cause of noncompliance,

   (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,

   (d) steps taken by the permittee to reduce and eliminate the noncomplying emission,

   and

   (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

   Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.

7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.

8. The permittee shall allow representatives of the State environmental control agency or representatives of the Environmental Protection Agency, upon the the presentation of credentials:

   (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;

   (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;

   (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

   (d) to sample at reasonable times any emission of pollutants;

   and

   (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

   Chief, Air Facilities Branch
   Air and Hazardous Materials Division
   U.S. Environmental Protection Agency
   Region IV
   345 Courtland Street
   Atlanta, Georgia 30308

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

TABLE V

NAAQS ANALYSIS RESULTS

	A Existing Ambient Background[a]	Maximum Impact From Proposed Modification	Maximum Impact From Proposed Modification Plus Other Increment Consuming Sources[b]	B Maximum Concentration Within New Source's Impact Area From All Existing Sources	A+B Existing Ambient Plus Maximum Modeled Results[c]	TSP NAAQS (Ceiling)
Annual Average Concentration (ug/m^3)	51	2.3	8.6	11	62	75
Maximum 24-Hour Average Concentration[d] (ug/m^3)	115	8.7	11	33	148	150

a. 1978 ambient monitoring data from Dade County Station Number 34 (state identification number 10-0860-019).

b. These concentrations include all new sources since August 7, 1977 and major sources since January 1, 1975.

c. This maximum concentration is conservative because contributions from all existing sources are counted twice, once by the monitor and once by modeling results.

d. Highest, second highest concentration, or standards not to be exceeded more than once per year.

	Maximum Modeled TSP Impacts	TSP Significance Levels	TSP Class I Increments
Annual Average ug/m^3	< 1	1	5
24-Hour Average ug/m^3	1	5	10

Review of this table shows that CRSTER model results show impacts on the Class I to be less than the defined significance levels. On this basis, it is concluded that the proposed modification will not cause a significant adverse impact on the Class I area.

D. Soils, Vegetation and Visibility Impacts

The area surrounding the plant site contains vegetation which is believed not to be of significant commercial or recreational value. The soil is primarily peat and muck to a depth of about 36 inches. No significant adverse impact on soils or vegetation is expected to result from deposition of TSP or other emissions from the proposed facility.

The Dade County Region surrounding the plant is high in relative humidity. This natural condition limits local visibility to a certain extent. In addition, there is a sizeable amount of atmospheric pollutants emitted from existing anthroprogenic sources. For these reasons, and because the proposed modification will incorporate BACT for TSP, there is no significant adverse visibility impact anticipated from construction of the proposed facilities.

E. Growth Impact

The potential for general industrial expansion in Dade County is not significantly impacted by the proposed modification. This is true even though emissions from existing industry contribute heavily to areas in which the ambient TSP concentrations nearly exceed NAAQS levels. This existing situation is evidenced by modeling analyses performed by the applicant. However, the areas in which the NAAQS may be threatened lie beyond the distance where the