UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

JAN 21 1981

REF: 4AH-AP

Mr. Ed Mayer
Agrico Chemical Company
South Pierce Chemical Works
Post Office Box 1969
Bartow, Florida 33830

RE: Modification to Phosphate
Chemical Complex (PSD-FL-061)

Dear Mr. Mayer:

Review of your April 3, 1980 application to modify your phosphate chemical complex, near Ft. Meade, Florida has been completed. The construction is subject to rules for the Prevention of Significant Air Quality Deterioration (PSD), contained in 40 CFR 52.21.

We have determined that the construction, as described in the application, meets all applicable requirements of the PSD regulations, subject to the conditions in the conclusions section to the Final Determination (enclosed). EPA has performed the preliminary determination concerning the proposed construction, and published a request for public comment on November 21, 1980. No comments were received. Authority to Construct a Stationary Source is hereby issued for the facility described above, subject to the conditions in the conclusions section to the Final Determination. This Authority to Construct is based solely on the requirements of 40 CFR 52.21, the Federal regulations governing significant deterioration of air quality. It does not apply to NPDES or other permits issued by this agency or permits issued by other agencies. Information regarding EPA permitting requirements can be provided if you contact Mr. Joe Franzmathes, Director, Office of Program Integration and Operations, at (404) 881-3476. Additionally, construction covered by this Authority to Construct must be initiated within 18 months from the receipt of this letter.

Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, will be subject to enforcement action.

Authority to Construct will take effect on the date of this letter. The complete analysis which justifies this approval has been fully documented for future reference, if necessary. Any questions concerning this approval may be directed to Mr. Kent Williams, Chief, New Source Review Section.

Sincerely yours,

Thomas W. Devine
Director
Air and Hazardous Materials Division

TWD:JLS:cg

Enclosure

cc: S. Smallwood
Florida Department of Environmental Regulation

Final Determination
Agrico Chemical Company
PSD-FL-061

I. Applicant

Agrico Chemical Company
South Pierce Chemical Works
P. O. Box 1969, Hwy 630
Bartow, Florida 33830

II. Location

The proposed modification is located on State Road 630 in southwest Polk County. The plant is approximately 8 miles west of Ft. Meade and 12 miles southwest of Bartow. The UTM coordinates are: Zone 17, 407.4 km east and 3071.7 km north.

III. Project Description

The applicant proposes to increase the production of phosphate fertilizer. The project will include construction of a new diammonium phosphate (DAP) plant, a new purified monoammonium phosphate (MAP) and DAP plant, a new sulfuric acid plant, and a new product loadout facility. The existing phosphoric acid plant will be modified to increase phosphoric acid production capacity. This expansion will increase the present capacity from approximately 430,000 to 625,000 tons per year of P_2O_5. Table 1 summarizes the capacity levels resulting from construction of new and modified emission units.

IV. Source Impact Analysis

The existing plant is a major source (potential to emit greater than 100 tons per year) of particulate matter (PM), sulfur dioxide (SO_2), nitrogen oxide (NO_x) and fluorides. Moreover, the proposed modification significantly increases emissions of air pollutants regulated under the Clean Air Act (See Table 2). Therefore, in accordance with 40 CFR 52.21 as promulgated August 7, 1980 (45 FR 52676), the proposed construction will be a major modification; and shall be subject to a Prevention of Significant Deterioration (PSD) review.

Table 1

Summary of Project

Facility		Maximum Operating Rate
A.	New	
1.	Diammonium Phosphate (DAP) Plant	47.90[a]
2.	Sulfuric Acid Plant	83.3[b]
3.	Wet Rock Grinding	c
4.	DAP Storage and Shipping	100/200[d]
5.	Ammonia Storage	c
6.	Monoammoniam Phosphate (MAP)/DAP Plant	8.7/7.5[a]
B.	Modified (After)	
	Phosphoric Acid Plant	110.9[a]
	Cooling Pond and Gypsum Stack Liquid Area	139 & 160[e] Maximum
C.	Modified (Before)	
	Phosphoric Acid Plant	76.3[a]
	Cooling Pond and Gypsum Stack Liquid Area	139 & 160[e] Maximum

[a] tons per hour equivalent P_2O_5 feed.

[b] tons per hour 100% H_2SO_4 produced.

[c] unknown capacity, no pollutant emissions.

[d] tons per hour, maximum DAP input/output.

[e] acres of cooling pond (constant use) and acres of gypsum stack (variable use).

The PSD review shall be applied to each pollutant regulated under the Clean Air Act as amended August 7, 1977 (Act) for which the modification would result in a significant net emissions increase. Table 2 summarizes potential to emit of all pollutants regulated under the Act which are affected by the proposed modification. This shows the net emissions increases for PM, SO_2, Acid Mist, NO_x and Fluorides to be significant (Line E greater than line F). The net increase of carbon monoxide (CO) emissions is not significant, and therefore is not subject to PSD review.

The PSD review shall analyze the following:

A. Best Available Control Technology (BACT)
B. National Ambient Air Quality Standards (NAAQS) Impacts,
C. PSD Increments Impacts;
D. Class I Area Impacts;
E. Growth Impacts;
F. Soils, Visibility and Vegetation Impacts.

A. BACT

The applicant has submitted an application which has been determined to be complete before August 7, 1980. This application showed the modification was subject to 40 CFR 52.21 as in effect on June 19, 1978. Therefore, in accordance with 40 CFR 52.21 (i)(9) the more restrictive requirements for BACT specified in the current PSD regulations, 40 CFR 52.21 (j) shall not apply. Instead the requirements in accordance with 40 CFR 52.21 (j) as in effect on June 19, 1978 shall be applied. The latter does not require a BACT review for facilities emitting NO_x or fluorides because the uncontrolled emissions of NO_x are less than 100 tons per year, and the controlled emissions of fluorides are less than 50 tons per year. However all applicable emission limitations under the State Implementation Plan (SIP) and under the standards of performance under Title 40 Code of Federal Regulations Part 60 (40 CFR 60, NSPS) and Part 61 (40 CFR 61 NESHAPS) must be met. Thus Table 3 shows several facilities which emit fluorides to be limited by NSPS requirements. There are no applicable NESHAPS requirements. NESHAPS controls a specific list of hazardous pollutants, none of which are emitted from this source.

Table 2

SUMMARY OF POTENTIAL TO EMIT, TONS/YEAR

Facility	PM	SO_2	Acid Mist	NO_x	CO	Fluorides
A. New Construction[a]						
DAP Plant	105	147		19	4.8	12.7
H_2SO_4 Plant		1460	55	59	.4	
DAP Storage and Shipping	15					
MAP/DAP Plant	18					1.9
B. Modified (After)[a]						
Phosphoric Acid Plant						9.7
Cooling Pond/Gypsum Stack						136[d]
C. Modified (Before)[b]						
Phosphoric Acid Plant						6.7
Cooling Pond/Gypsum Stack						122[e]
D. Increases from Modified[c]						17
E. Increases from Modified and New	138	1607	55	78	5.2	31.6
F. Significant[f] Net Increase	25	40	7	40	100	3

[a]At maximum capacity for 8760 hours per year potential operating time.

[b]Actual emissions for estimated actual operating time.

[c]Maximum potential less estimated actual.

[d]Based upon an emission factor of 3.22 pounds of fluorides per acre-day (calculated from literature information for an optimum size cooling pond) over the 162 acres required for cooling to within 3°F of ambient plus an emission factor of 1.62 pounds per acre-day over the remaining 137 acres of ambient temperature pond area.

[e]Based upon 3.22 times 114 acres required for cooling plus 1.62 times the remaining 185 acres (see note d above).

[f]As defined 40 CFR 52.21 (45FR52737, August 7, 1980).

There are no more restrictive limitations of fluorides or NO_x under the SIP.

All new or modified facilities emitting any of the three pollutants PM, SO_2 or acid mist require use of BACT. Which means the maximum degree of reduction for each pollutant as determined on a case-by-case review, taking into account energy, environmental, and economic impacts. The applicant has proposed BACT for each applicable case and has also evaluated alternative control technologies with justification for the choice proposed. The justification is based upon the criteria listed above.

EPA has reviewed the technology and emission limits proposed as BACT, concurred in some cases, and required amended values in other cases to achieve a determination which best achieves the defined objectives. In no case can the emissions exceed the allowable emission under 40 CFR 60, 40 CFR 61, or the State Implementation Plan (SIP). These emission limits are also summarized in Table 3. The applicant amended proposed TSP and SO_2 emissions from the new DAP facility to conform with previous State of Florida BACT determinations on similar facilities. The case by case Florida BACT determination has not been completed for the proposed Agrico facilities. The Federal PSD permit shall be conditioned to include any more stringent emissions standards that are imposed by the State of Florida under its SIP for these proposed facilities.

1. Diammonium Phosphate (DAP) Plant

a. PM Control

The applicant proposed to achieve BACT for PM by two systems, each with two stages of wet scrubbing. One system controls emissions from the reactor and granulator and the other system controls emissions from the product dryer and cooler. The two stages of each system have identical design.

The first stage in each system is a coaxial venturi scrubber operating at 12 to 14 inches of water pressure drop. The scrubbing fluid in these first stage units contains ammonia losses as well as controlling particulate emissions. Ammonia losses which are not designated as regulated pollutants are negligible.

Table 3

ALLOWABLE EMISSIONS LIMITS

Facility	Pounds per hour	Standard lbs/operating unit	Basis
A. New			
DAP Plant			
PM	24	0.5[a]	BACT[b]
SO_2	33.5	0.7[a]	BACT[b]
Fluorides	2.9	0.06[a,g]	NSPS
Sulfuric Acid Plant			
SO_2	333.3	4[c]	NSPS, BACT[f]
Acid Mist	12.5	0.15[c]	NSPS, BACT[f]
Visible Emissions		<10% Opacity	NSPS, BACT[f]
DAP Storage and Shipping			
PM	3.4	0.015 grains/dscf	BACT[f]
Visible Emissions		<5 % Opacity	BACT[e]
MAP/DAP Plant			
TSP	4.3/3.8[h]	0.5[a]	BACT[b]
Fluorides	0.52/.46[h]	.06[a,g]	NSPS
MAP/DAP Product Handling			
PM	0.5	0.10 grains/dscf	BACT[f]
Visible Emissions		<5% Opacity	BACT[e]
B. Modified			
Phosphoric Acid Plant			
Fluorides	2.22	0.02[a,g]	NSPS

[a]Pounds of pollutant per ton of equivalent P_2O_5 feed.

[b]Proposed by applicant based upon previous State of Florida BACT determinations made upon similiar processes.

[c]Pounds of pollutant per ton of 100% H_2SO_4 produced.

[d]Continuous monitoring of SO_2

[e]Imposed by EPA consistent with mass emission standard, proposed by applicant; this opacity standard is subject to conditions of 40 CFR 60.11.

[f]Proposed by applicant

[g]Continuous monitoring of feed rate and scrubber pressure drop.

[h]MAP or DAP

The second stage in each system is a packed tail gas scrubber. The packed section is preceded by a spray chamber and dewatering section. The packed section is followed by mist eliminators. The scrubbing fluid is pond water and has the primary function of controlling florides. PM control with this unit is a function of proper design and operation aimed at preventing the creation of particulates in the unit. The gases arriving at these tail gas scrubbers have been well cleaned of rock and fertilizer dust in the preceding coaxial venturi scrubbers. The potential source of new particulates is from the gaseous SiF_4 which can react with water to yield a gelatinous hydrated silica. The functions of the spray chamber and dewatering section are to remove this material and avoid its accumulation in the packing.

The applicant has proposed 0.5 pounds of particulate per ton of equivalent P_2O_5 feed as an emission limit and proposes the scrubber systems described as the BACT to achieve this limit. EPA concurs with this choice, which was based upon previous BACT determinations made by the State of Florida for the same product.

b. SO_2 Control

SO_2 originates at the DAP facility from the proposed use of 2.25% sulfur fuel oil at a maximum heat input of 60.42 MMBtu per hour in the DAP dryer.

To achieve the proposed BACT emission limit of 0.7 pounds of SO_2 per ton of equivalent P_2O_5 feed (0.56 lb/MBtu), the applicant proposes that 76 percent of the SO_2 will be absorbed by direct contact with the product and reacted with the free ammonia present in the dryer.

The applicant has proposed the emission limit as BACT based upon a State of Florida BACT determination made for

a similar plant. EPA concurs that the proposed emission standard and the proposed maximum of 2.25% sulfur in the fuel oil, 76 percent reduction and the resulting 33.5 lb/hr emission rate constitute BACT for SO_2 for the DAP dryer.

c. Fluorides Control

The applicant proposes to meet the NSPS through application of the tail gas packed scrubber described in the TSP control section above.

The NSPS for fluoride emissions is 0.06 pounds per ton of equivalent P_2O_5 feed and the proposed control equipment should be satisfactory to meet that standard.

2. Sulfuric Acid Plant

a. SO_2 Control

The applicant has proposed double absorption technology and an emission limit of 4.0 pounds per ton of 100% H_2SO_4 produced as BACT for SO_2 from the H_2SO_4 plant, based on the NSPS requirements (40 CFR subpart H). EPA recently reviewed available H_2SO_4 plant technology and concluded that double absorption remained the best technology and that no basis for reducing the NSPS limit exists. Similarly, no justification could be found to require a lower emission limit for the proposed plant and EPA agrees with the applicant's proposal for SO_2 for the H_2SO_4 plant.

b. Acid Mist Control

The applicant has proposed high efficiency mist eliminators and a 0.15 lb/ton emission limit as BACT for H_2SO_4 mist based on the NSPS requirements (40 CFR 60.83).

EPA concurs that the NSPS for acid mist of 0.15 pound per ton of 100% H_2SO_4 produced and the proposed control equipment does constitute BACT for this case on the basis that no justification for more stringent control could be found.

3. DAP Storage and Shipping - PM Control

Particulates are generated by continuous input of 100 tons per hour of DAP into the storage building and an intermittent loadout of product at a maximum rate of 200 tons per hour. The applicant proposes to ventilate all points of fugitive particulate generation inside and outside the storage building. These will be ducted to a control system consisting of dry cyclone dust collectors followed by a wet venturi scrubber. The applicant proposes this equipment will control to 0.015 grains per dry standard cubic foot of gaseous effluent. The applicant proposes this equipment and an emissions limit of 3.4 pounds per hour as BACT for the PM control of this facility.

EPA concurs that this equipment and the proposed emissions of 3.4 pounds per hour while operating at maximum input and output rates simultaneously does constitute BACT for this case.

4. Phosphoric Acid Plant - Fluorides Control

The applicant must meet the NSPS and this is to be accomplished with the existing wet scrubbers. The increased production capacity to be obtained from the proposed modification is to be accomplished with the addition of evaporator capacity. The remainder of the plant, including the scrubbers, already has the capability of operating at the proposed capacity. The existing wet scrubbers were constructed in accordance with a PSD permit (PSD-FL-035) issued March 17, 1980.

The NSPS for fluoride emissions is 0.02 pound per ton on equivalent P_2O_5 feed for phosphoric acid plants. The proposed use of existing equipment with adequate capacity should be satisfactory to meet that standard.

5. Cooling Pond and Gypsum Stack - Fluorides Control

The cooling pond and gypsum stack are required to cool the process water by evaporation to allow its reuse as process cooling and scrubbing water. The cooled temperature of this water is a function of its initial temperature, flow rate, surface area exposed to evaporation, and ambient air conditions of temperatures and humidity.

Fugitive emissions of fluorides occur from the surface of the cooling water pond and the gypsum stack. These emissions are a function of the area, temperature, and fluorides concentration of the emitting surfaces. The emissions of fluorides are greatest at the hot ($\sim 113^{o}F$) end of the pond where the process water enters and decreases as the water cools toward an equilibrium with the conditions ($\sim 92^{o}F$) of the ambient air.

The implication of the assumption above is that fluoride emissions for a given heat load would be minimized by using a pond size that was only as large as was required to achieve a pond temperature low enough to reuse in the process. However another function of the pond size is to maintain a water balance between evaporation and rainfall. Any overflow creates a potential surface water pollution problem and must be treated to maintain water quality. This is usually avoided by having enough pond area to hold a 25 year maximum rainfall and allow evaporation to proceed, resulting in a no discharge status.

The applicant has proposed to maintain the existing cooling pond without increasing its area above the existing 20 acres in the return channel and 119 acres in the pond reservoirs. Partitioning within the pond would be changed to eliminate stagnant areas and improve cooling efficiency.

The applicant has further proposed to maintain the existing additional 160 acre cooling surface on top of the gypsum stack. This cooling surface is not used constantly since it requires energy consumption through pumping. It is only used intermittantly during periods when rainfall exceeds evaporation. When not in full use the gypsum stack cooling area decreases and thus emits less fluorides. The estimate of fluoride emissions assumed this surface to be fully utilized at its maximum area; therefore, the estimate is conservatively high.

The literature yields a variety of overall gypsum pond emission factors (0.1 to 10 pounds of fluoride per acre-day). This review has been based upon a factor of 3.22 pounds per acre-day derived (from data in Reference 3) for an optimum size (calculated by the applicant) cooling pond (113°F inlet temperature and 95°F outlet temperature at 92°F ambient air temperature). The remaining areas of the ponds are assumed to be constant, averaging ~1.5°F above the ambient air and emitting at the lower rate of 1.62 pounds of fluoride per acre-day.

The proposed increase in phosphoric acid production results in a heat load increase to the cooling pond. The required cooling area increases from 114 acres to 162 acres. The total available area remains constant at 299 acres (20 + 119 + 160 = 299 acres). Therefore the remaining constant temperature area decreases from 185 to 137 acres. The net total increase in fluoride emissions calculates to be 76.8 pounds per day (14 tons/per year).

This facility is exempt from BACT requirements and no SIP or NSPS limits are placed upon these fugitive emissions of fluoride. EPA concurs that the applicant's proposal to have no increase in the areas of the existing cooling and gypsum stack ponds, and to continue the operating practice of minimizing the gypsum stack pond cooling time and area will ensure the minimum increase of fluoride emissions and the applicability of the BACT exemption (less than 50 tons per year increase in total fluorides emitted). These limiting requirements are made a condition of this permit.

6. Purified MAP/DAP Plant

a. PM Control

The applicant proposes to control particulates from four emitting units (Dryer and Cooler, Storage Hoppers, Bagging Machines, and Dryer Start Bin) with bag collectors. These collectors will control particulates to 0.10 grains per day standard cubic foot of gaseous emissions. The applicant

further proposed to control particulates from the MAP or DAP Reactor with a venturi scrubber. The emissions from the Dryer and Cooler bag collector are to be joined with the emissions from the Reactor scrubber. The other three bag collectors will emit individually.

The applicant has proposed 0.5 pounds of particulate per ton of equivalent P_2O_5 feed as an emission limit for the combined emissions of the reactor's dryer and cooler. He proposes the baghouse and venturi scrubber described as the BACT to achieve this limit. EPA concurs with this choice, which was based upon the State of Florida BACT determination for processing DAP alone.

b. Fluoride Control

The applicant proposes to meet NSPS through the use of defluorinated phosphoric acid which has been concentrated in an evaporator as feed stock plus the use of the venturi scrubber described above (primarily for control of particulates).

The NSPS for fluoride emissions is 0.06 pounds per ton of equivalent P_2O_5 feed and EPA concurs that process and control equipment should be satisfactory to meet that standard.

B. Impact Upon National Ambient Air Quality Standards (NAAQS)

The ambient air standards for particulate matter, SO_2, and NO_x for various averaging times are;

Pollutant	Averaging Time	NAAQS [a,b]
Particulates	Annual	75[c]
	24-Hour	150[e]
SO_2	Annual	80[d]
	24-Hour	365[e]
	3-Hour	1300[e]
NO_x	Annual	100[d]

[a]The lower concentration of either the primary or secondary standard;

[b]Micrograms per cubic meter;

[c]Geometric mean;

[d]Arithmetric mean;

[e]Not to be exceeded more than once per year;

No NAAQS has been established for acid mist or fluorides. For this reason, NAAQS analysis is required only for PM, SO_2, and NO_x.

1. Background Concentrations

Background air quality relevant to Agrico's air analysis includes those pollutant concentrations due to natural sources and distant, unidentified man-nade sources. The applicant has proposed the following concentrations as background:

Pollutant	Averaging Time	Background Concentrations Proposed	Used
Particulate	Annual	30	30
	24-Hour	60	60
SO_2	Annual	0	20
	24-Hour	0	20
	3-Hour	0	20

The proposed values for particulates were based upon the published results of two studies [4,5] of monitored air quality in 1977 and 1979 carried out in the vicinity (10 miles north and 25 miles southwest of Agrico, respectively). EPA concurs these are representative of the source. The proposed values for SO_2 were submitted with the assumption that all of the sulfur dioxide emitted within several miles of the proposed Agrico chemical complex is emitted from permitted air pollution sources. In the absence of monitored site specific data, EPA must assume a higher, more conservative, value of 20 micrograms per cubic meter, consistent with the Air Quality Monitoring Guideline [6], as background

to be added to the modelled concentrations of the known man-made source.

2. Modelled Results

a. Areas of Influence

Initial CRSTER modelling of the proposed new Agrico facilities alone was reformed to determine the maximum radial distance these sources would impact at or above the significance levels defined in the preamble to 40 CFR 52.21 (43 FR 26398). The results of these modelling runs are summarized in Table 4.

The areas of influence defined by these results were used to select existing and new sources within those areas or capable of impacting upon those areas. Interactions between facilities so selected and the impacts from the proposed new construction were then evaluated.

b. Impacts Upon Annual Standards

The initial CRSTER modelling had revealed that the proposed new Agrico particulate sources had no significant impact upon the annual average. Therefore no further study relating to the annual NAAQS for particulates was made.

The maximum annual NO_x impact from the proposed modification is determined to be 0.3 ug/m^3 which is below the significance level (See Table 4), therefore no impact upon the NAAQS is expected.

To determine the impact upon the annual SO_2 NAAQS within the area of influence of the proposed modification two AQDM modelling runs were made. The receptors for these runs were spaced 1 km apart in a 5 km x 15 km grid with the Agrico sources approximately at its center.

The first run determined the impact of 36 existing major emitting sources of SO_2. Two of these sources are located in Manatee County southwest of Agrico, and six are

Table 4

SUMMARY OF AREA OF INFLUENCE ANALYSES

Pollutant	Maximum Radial Distance, km[a]		
	Averaging Times		
	Annual	24-Hour	3-Hour
SO_2	14	26	27
PM	None	2	Not Applicable
NO_x	None	Not Applicable	Not Applicable

[a]to a significant impact, as defined below.

Pollutant	Minimum Ambient Impact That is Significant[b], ug/m^3		
	Averaging Times		
	Annual	24-Hour	3-Hour
SO_2	1	5	25
PM	1	5	--
NO_x	1	--	--

[b]Defined in the preamble to 40 CFR 52.21 (43 FR 26398)

located in Hillsborough County west-northwest of Agrico. The remaining 26 sources are in Polk County surrounding Agrico. These existing facilities include 4 located at the Agrico site.

The second run determined the impact of 11 new facilities including the two SO_2 emitting facilities in this proposal. All of these are located in Polk County.

The results of these two runs were totalled for each point. The maximum total was 31 micrograms per cubic meter. When the background of 20 is added, the total of 51 being below the annual NAAQS of 80 shows this standard will not be violated by the proposed construction. This analysis is included with the analysis of the short term impacts in Table 5.

c. Impacts Upons Short Time Standards

Impacts upon short time standards (24-hour and 3-hour) are a function of specific worst case meteorology and of specific interaction between two close neighboring sources (or a few sources fairly closely aligned). With these guidelines the applicant's consultant selected neighboring sources having large PM and SO_2 emissions and selected worst case meteorological data from the 5 years (1970-1974) data used in the CRSTER preliminary runs.

"The highest and second highest impacts obtained", in the CRSTER runs resulted in maximum impacts due east of the Agrico facility. These meterological data were selected. No major close neighboring sources (existing or new) lie to the west. Therefore these cases were run with Agrico facilities only and the receptor grid set up east of Agrico.

The second set of cases studied was with New Wales sources interacting. The worst case meteorology was selected with wind directed from the Northwest (from New Wales toward Agrico) and the receptor grid was set up southeast of Agrico.

Finally a third set of cases featured interaction from existing and new facilities north of Agrico at Farmland Industries, Inc., C. F. Industries, W. F. Grace and Company, and Royster Company. Similarly worst case meterological data and receptor grid set up was appropriately selected.

The results of all these cases to show impacts upon the various NAAQS's are summarized in Table 5. To each of the modelled results the appropriate background concentrations are added and the totals compared with the applicable NAAQS.

The applicant proposes these analyses demonstrate that the modification will not pose a threat to any NAAQS. EPA agrees with this conclusion.

C. Impacts Upon PSD Increments

The PSD increments, specified in 40 CFR 52.21 (c), for particulate matter and SO_2 for various average sampling times are:

Pollutant	Averaging Time	PSD Increment[a] Class I Area	Class II Area
Particulates	Annual	5[b]	19[b]
	24-hour	10[d]	37[d]
SO_2	Annual	2[c]	20[c]
	24-hour	5[d]	91[d]
	3-hour	25[d]	512[d]

[a]Micrograms per cubic meter;

[b]Geometric Mean;

[c]Arithmetic Mean;

[d]Not to be exceeded more than once per year.

These increments are maximum allowable increases over baseline ambient air concentrations. Although the baseline concentrations represent actual air quality as of August 7, 1977 these values do not need to be

Table 5

Impacts Upon the NAAQS

Pollutant Averaging Time	Air Quality, Micrograms Cubic Meter Maximum	Background	Total Worst Case	NAAQS
PM				
Annual	<3[a]	30	<23	60
24-Hour[e]	55	60	115	150
SO_2				
Annual	19	20	39	80
24-Hour				
Case 1[b]	153	20	173	365[f]
Case 2[c]	98			
Case 3[d]	117			
3-Hour				
Case 1[b]	390	20	410	1300
Case 2[c]	274			
Case 3[d]	256			
NO_x Annual	<1[g]			

[a]Maximum from existing (2 ug/m^3) plus maximum from proposed (<1 ug/m^3).

[b]Wind from the west, six new and existing facilities at Agrico interact with no neighboring sources, receptors east of Agrico.

[c]Wind from the northwest, six new and existing facilities at Agrico interact with 11 new and existing facilities at New Wales, receptors southeast of Agrico.

[d]Wind from the north, six new and existing facilities at Agrico interact with 16 new and existing facilities at four sources north of Agrico, receptors south of Agrico.

[e]No neighboring sources of TSP with areas of influence sufficient to interact with proposed source area of influence, therefore this represents seven new and existing facilities at Agrico with all wind directions.

[f]Florida NAAQS is more restrictive at 260, but not applicable to a Federal review.

[g]Air quality impacts of NO_x are insignificant as defined in the preamble to 40 CFR 52.21, June 19, 1978, (43 FR 26398). And an indepth analysis was not required.

formally established. The increment impact review is made upon the changes due to the proposed new facilities of the Agrico application plus all new sources or modifications which might interact with the proposed facilities to consume increment.

The impacts upon Class II area increments parallel the modelling done to determine impacts upon the NAAQS. However the impacts from facilities affecting baseline are not added in. Only the concentrations due to the proposed new Agrico facilities and other increment consuming facilities within Agrico's impact area are considered. Also considered is increment comsumption at major stationary source's to a distance of 50 kilometers. The modeling results are compared with the applicable Class II area increments. The increment analysis results are summarized in Table 6. The analyses shows that no violation of the Class II area increments should occur.

D. Impacts Upon Class I Areas and Areas of Known Increment Violation

The nearest Class I area is the Chassahowitzka National Wildlife Refuge located 114 kilometers northwest of the source. Since this is greater than 100 kilometers and models cannot reasonably predict beyond 100 kilometers no analysis of Class I area impact is required. The small size of the areas of significant influence for PM and SO_2 compared with the 114 km distance further substantiates that the PM and SO_2 emissions will not affect the Class I area. The acid mist is coemitted from the same stack as the primary source of SO_2 but at less than half the rate, therefore it was concluded that acid mist will have no affect upon the Class I area.

There are no known areas of Class II increment violation in the vicinity of the proposed modification. The area of PM non-attainment which surrounds Tampa is 40 km to the west-northwest which is 20 times the maximum PM area of influence of the modification. The nearest area of SO_2 non-attainment is 92 kilometers west-northwest of the proposed modification. This is 3.4 times the maximum SO_2 area of influence. On this basis it is concluded that the modification will not impact any designated non-attainment area.

Table 6

Impact Upon Class II Increments

Pollutant Averaging Time	Concentration Increases, Microgram per Cubic Meter		Increment Consumed Percent
	Maximum	Increment	
PM			
Annual	>1	19	Not Significant
24-Hour[e]	5	37	13.5
SO_2			
Annual	4	20	20
Case 1 [b]	42[a]	91	46.1[a]
Case 2 [c]	29		
Case 3 [d]	26		
3-Hour			
Case 1 [b]	124[a]	512	20.5[a]
Case 2 [c]	80		
Case 3 [d]	72		

[a]Worst Case

[b]Wind from the west, two new facilities at Agrico interact with no neighboring sources, receptors east of Agrico.

[c]Wind from the northwest, two new facilities at Agrico interact with 5 new facilities at New Wales, receptors southeast of Agrico.

[d]Wind from the north, two new facilities at Agrico interact with 5 new facilities at 3 sources north of Agrico, receptors south of Agrico.

[e]No neighboring sources of PM with areas of influence sufficient to interact with proposed source area of influence, therefore this represents two new facilities at Agrico with all wind directions.

E. Growth Analysis

The proposed modification will result in approximately 70 new employees and will require an additional 58 truck trips per day. This represents 145,000 vehicle miles per year of increased auto and truck travel within 2 miles of the source. The proposed modification will increase rail traffic from an average of 47 rail cars per day to an average of 89 rail cars per day. The total secondary impact due to increased auto, truck and rail traffic is estimated to be:

Carbon Monoxide	15.2 tons per year
Nitrogen Oxide	22.9 tons per year
Particulate	2.5 tons per year
Sulfur Dioxide	3.4 tons per year

These emissions are distributed over line sources and thus should not significantly impact air quality in this rural area with limited other mobile source impact. This modification is determined to have no significant adverse air impact due to growth in the vicinity.

F. Impacts Upon Soils, Visibility and Vegetation

The applicant has concluded that impacts of PM and SO_2 upon soils, visibility and vegetation will not be detrimental since all are well below secondary NAAQS for these pollutants. No NAAQS has been established for sulfuric acid mist, therefore this judgement criteria is unavailable, considering the size of the facility, and with the source required to meet NSPS limits for acid mist (which includes a 10 percent opacity limit) it is concluded that these welfare related impacts will not be detrimental.

V. Conclusions

EPA Region IV proposes a final determination of approval for construction of the modification to the Agrico Chemical Company, South Pierce Chemical Works proposed in its application dated April 3, 1980, and amended by additional information dated April 28, May 1, 5, and 29, and July 17,1980. The conditions set forth in the permit are as follows:

1. The new and modified facilities shall be constructed in accordance with the capacities and specifications stated in Table 1 for new and modified facilities.

2. Emissions of particulates from the new DAP plant shall not exceed 24 pounds per hour at the maximum allowable operating rate of 47.9 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions shall not exceed 0.5 pound per ton of equivalent P_2O_5 feed.

3. Emissions of sulfur dioxide from the new DAP plant shall not exceed 33.5 pounds per hour at the maximum allowable operating rate of 47.9 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions shall not exceed 0.7 pound per ton of equivalent P_2O_5 feed. Further, the oil used to fuel the DAP dryer shall not contain more than 2.25 percent sulfur. The sulfur content of the fuel used during the compliance stack test for SO_2 emissions shall be recorded and that level of fuel oil sulfur content shall not be exceeded without another SO_2 emissions compliance test being performed. A record of all SO_2 test results and sulfur content of all fuel oil received shall be maintained. In lieu of the above evidence of continuing compliance the source may install continuous SO_2 monitoring/recording equipment subject to the requirements of 40 CFR 60.13 which includes the appropriate Performance Specifications of 40 CFR 60 Appendix B.

4. Emissions of fluorides from the new DAP plant shall not exceed 2.9 pounds per hours at the maximum allowable operating rate of 47.9 tons per hour of equivalent P_2O_5 feed. At lesser operating

rates the emissions shall not exceed 0.06 pound per ton of equivalent P_2O_5 feed.

5. Emissions of particulate from the new MAP/DAP plant shall not exceed 4.3 pounds per hour at the maximum allowable operating rate of 8.7 tons per hour of equivalent P_2O_5 feed while producing MAP or 3.8 pounds per hour at 7.5 tons per hour while producing DAP. At lesser operating rates the emissions shall not exceed 0.5 pounds per ton of equivalent P_2O_5 feed.

6. Emissions of fluorides from the new MAP/DAP plant shall not exceed 0.5 pounds per hour at the maximum allowable operating rate (see condition 5 above). At lesser operating rates the fluoride emissions shall not exceed 0.06 pounds per ton of equivalent P_2O_5 feed.

7. Emissions of sulfur dioxide from the new Sulfuric Acid plant shall not exceed 333.3 pounds per hour at the maximum allowable operating rate of 83.3 tons per hour of 100% H_2SO_4 produced. At lesser operating rates the emissions shall not exceed 4 pounds per ton of 100% H_2SO_4 produced.

8. Emissions of acid mist from the new Sulfuric Acid plant shall not exceed 12.4 pounds per hour at the maximum allowable operating rate of 83.3 tons per hour of 100% H_2SO_4 produced. At lesser operating rates the emissions shall not exceed 0.15 pound per ton of 100% H_2SO_4 produced.

9. Visible emissions from the new Sulfuric Acid plant shall be less than 10% opacity.

10. Emissions of particulates from the new DAP storage and shipping shall not exceed 3.4 pounds per hour when operated at maximum product handling capacity of 100 tons per hour input and simultaneously 200 tons per hour output. Visible emissions shall not exceed 5 percent opacity.

11. Emissions of fluorides from the modified Phosphoric Acid plant shall not exceed 2.22 pounds per hour at the maximum allowable operating rate of 110.9 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emission shall not exceed 0.02 pound per ton of equivalent P_2O_5 feed.

12. The mass flow rate of daily equivalent P_2O_5 feed and the total pressure drop across the scrubbing systems shall be continuously monitored for the new DAP and the new MAP/DAP plants, and the modified Phosphoric Acid plant in accordance with the provisions of 40 CFR 60 subparts (V, paragraph 60.223) and (T, paragraph 60.203), Standards of Performance for Phosphate Fertilizer Industry; (Diammonium Phosphate Plants) and (Wet Process Phosphoric Acid Plants) respectively.

13. Sulfur dioxide emissions of the new sulfuric acid plant shall be continuously monitored in accordance with the provisions of 40 CFR 60 Subpart H Paragraph 60.84 - Standards of Performance for Sulfuric Acid Plants. The applicant shall also comply with all other applicable requirements of 40 CFR 60 (NSPS).

14. Compliance with all emissions limits (Table 4) shall be determined by performance tests scheduled in accordance with General Conditions attached. The performance tests shall be in accordance with the provisions of reference methods in Appendix A of 40 CFR 60, except as provided under 40 CFR 60.8(b), as follows:

    a. Method 5 for concentration of particulate matter and associated moisture content;

    b. Method 1 for sample and velocity traverses;

    c. Method 2 for volumetric flow rate;

    d. Method 3 for gas analysis;

    e. Method 9 for visible emissions;

    f. Method 6 for concentration of SO_2 (from DAP plant);

g. Method 8 for concentration of SO_2 and acid mist (from H_2SO_2 plant); and

h. Method 13A or 13B for the concentration of total fluorides and the associated moisture content.

The sampling time for each run, using Method 5 shall be at least 50 minutes. The minimum sample volume shall be 0.85 dscm (ca. 30 dscf). A compliance test shall consist of the average of three consecutive runs.

Each facility shall operate within 10 percent of maximum capacity during sampling. The parameters of operating rate, control equipment variables and all continuous monitoring results shall be recorded during compliance testing and made a part of the reported results.

15. This permit is not valid until the applicant has received construction Air Permits covering the proposed new construction issued under the State of Florida SIP. Any emission limits of permits so issued which are more stringent than those specified in the conditions above shall become a condition of this permit.

16. The source shall comply with the requirements of the attached General Conditions.

References

1. Sulfuric Acid Plants, A Review of Standards of Performance for New Stationary Sources, EPA-450/3-79-003, January 1979.

2. A. A. Linero and R. A. Baker, Evolution of Emissions and Control Techniques for Reducing Florida Emissions from Gypsum Ponds in the Phosphoric Acid Industry, EPA-600/2-78-124, June 1978.

3. W. R. King and J. K. Ferrell, Fluoride Emissions from Phosphoric Acid Plant Gypsum Ponds, EPA-650/2-74-095, October 1974.

4. Sholtes and Koogler Environmental Consultants, A Comparison of Total Suspended Particulate Matter Levels in the Ambient Air Measured at Two Monitoring Sites in Mulberry, Florida, April 1977.

5. U.S. EPA Region IV, Environmental Impact Statement - Draft, Estech General Chemicals Corporation, Duette Mine, Manatee County, Florida, October 1979.

6. Ambient Monitoring Guidelines for Prevention of Significant Deterioration, OAQPS 1.2-096 USEPA, May 1978.

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.

Best Available Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

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REF: 4AH-AF

Ms. Carolyn Dekle
State A-95 Coordinator
Florida State Planning and Development Clearinghouse
Office of Planning and Budget
The Capitol
Tallahassee, Florida 32301

RE: Container Corporation of America
Modification to Kraft Paper Mill
PSD-FL-062

Dear Ms. Dekle:

I wish to bring to your attention that the Container Corporation of America proposes to modify its existing kraft paper mill in Fernandina Beach, Florida, and that emissions of air pollutants will thereby be increased. The U. S. Environmental Protection Agency has reviewed the proposed modification under the authority of Federal Prevention of Significant Deterioration Regulations (40 CFR §52.21) and has reached a preliminary determination of approval with conditions for this modification. This approval applies only to Federal regulatory requirements and has no bearing on State or local functions.

Please also be aware that the attached public notice announcing the Agency's preliminary determination, the availability of pertinent information for public scrutiny and the opportunity for public comment, will be published in a local newspaper, Florida Times Union, in the near future. This notice has been mailed to you for your information and in accordance with regulatory requirements. You need take no action unless you wish to comment on the proposed construction.

If you have questions, please feel free to call Dr. Kent Williams, Chief, New Source Review, at 404/881-4552 or Mr. Jeffrey Shumaker of TRW Inc. at 919/541-9100. TRW is under contract to EPA, and its personnel are acting as authorized representatives of the Agency in providing aid to the Region IV PSD review program.

Sincerely yours,

Tommie A. Gibbs
Chief
Air Facilities Branch

Attachment

PUBLIC NOTICE

(PSD-FL-062)

A modification to an existing air pollution source is proposed by Container Corporation of America located in Fernandina Beach, Nassau County, Florida. The source is a kraft paper mill and it is proposed to increase its steam generating capacity and change fuel usage. A 1084 million BTU/hr coal fired boiler will be constructed.

The modification will increase emissions of air pollutants by the following amounts in tons per year:

PM	SO_2	NO_x	CO
188	1108	2091	225

The maximum increment consumed by the modified source is as follows:

	Annual	24-hour	3-hour
PM	Insignificant	3%	N/A
SO_2	6.5%	30.9%	18.2%

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 Container Corporation are available for public review in the Fernandina Beach Public Library, 25 N. 4th Street, Fernandina Beach, Florida.

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 30365

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

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MAR 1981
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AQM

REF: 4AH-AF

Mr. Steve Smallwood, Chief
Bureau of Air Quality Management
Division of Environmental Programs
2600 Blair Stone Road
Tallahassee, FL 32301

RE: Container Corporation of America
Modification to Kraft Paper Mill
PSD-FL-062

Dear Mr. Smallwood:

Enclosed for your review and comment are the Public Notice and Preliminary PSD Determination for the Container Corporation's proposed modification to an existing kraft paper mill located in Fernandina Beach, Florida. The public notice will appear in a local newspaper, Florida Times Union, in the near future.

Please let my office know if you have comments or questions regarding this determination. You may contact Mr. Kent Williams, Chief, New Source Review, at 404/881-4552 or Mr. Jeffrey 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 yours,

Tommie A. Gibbs

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Chief
Air Facilities Branch

Attachment

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(PSD-FL-062)

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The modification will increase emissions of air pollutants by the following amounts in tons per year:

PM	SO_2	NO_x	CO
188	1108	2091	225
208	5141	2570	396

The maximum increment consumed by the modified source is as follows:

	Annual	24-hour	3-hour
PM	Insignificant	3%	N/A
SO_2	6.5%	30.9%	18.2%

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 Container Corporation are available for public review in the Fernandina Beach Public Library, 25 N. 4th Street, Fernandina Beach, Florida.

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 30365

Preliminary Determination
Container Corporation of America
PSD-FL-062

I. Applicant

Container Corporation of America
North Eighth Street
Fernandina Beach, Florida 32034

II. Location

The proposed modification is located in the northwest sector of Fernandina Beach, Nassau County, Florida. This is on Amelia Island, approximately 40 kilometers northeast of Jacksonville, Florida. The UTM coordinators are: Zone 17, 456.2 km east and 3394.2 km north.

III. Project Description

The applicant proposes to modify its existing kraft paper mill by increasing steam generation capacity and changing fuel usage. Dependence on fuel oil is to be reduced by adding the capability to burn off coal and by the increased use of wood waste. The applicant proposes to construct the following new units:

- A coal/wood waste boiler (#7);
- Coal preparation and materials handling facilities to supply fuel to the new boiler; and
- Ash handling disposal facilities for the new boiler.

The modification will also include complete shutdown of the following facilities:

- No. 6 power boiler; and
- No. 3 recovery boiler and its associated smelt tank.

Power boiler No. 3 will be placed on "cold" standby. It will not be used except where one or more of the larger boilers is out of service.

Equipment capacity data for affected emissions units are summarized in Table 1.

IV. Source Impact Analysis

The existing kraft pulp and paper mill has the potential to emit greater than 100 tons per year of particulate matter (PM), sulfur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOC) and carbon monoxide (CO). The existing source, therefore, is a major stationary source. The proposed modification significantly increases emissions of pollutants regulated under the Clean Air Act (Act) as amended August 7, 1977 (see Table 2). Thus, in accordance with Title 40, Code of Federal Regulations, Part 52.21 (40 CFR 52.21) as promulgated August 7, 1980 (45FR52676), the proposed project is a major modification and is subject to PSD review.

PSD review applies to each pollutant for which the modification would result in a significant net emissions increase. Table 2 summarizes emission changes of all pollutants regulated under the Act affected by the proposed modification. The table shows the proposed net emissions increases of PM, SO_2, NO_x, VOC, and CO are significant as defined in the PSD regulations 40 CFR 52.21(b)(23), and therefore are subject to PSD review.

The PSD review analyzes the following:

A. Best Available Control Technology (BACT);
B. PSD Increment Impacts;
C. Class I Area Impacts;
D. National Ambient Air Quality Standards (NAAQS) Impacts;
E. Growth Impacts; and
F. Soils, Vegetation, and Visibility Impacts.

A. Best Available Control Technology

The applicant has submitted an application which has been determined to be complete before August 7, 1980. This application showed the modification was subject to 40 CFR 52.21 as in effect on June 19, 1978. Therefore, in accordance with 40 CFR 52.21(i)(9), the requirements for BACT specified in the 1980 PSD regulations, 40 CFR 52.21(j), shall not apply. Instead the requirements in accordance with 40 CFR 52.21(j) as in effect on June 19, 1978 shall be applied. The latter does not require a BACT review for facilities emitting VOC, because the increase of uncontrolled VOC emissions is less than 100 tons per year.

Any new or modified facility which increases emissions of SO_2, PM, NO_x, or CO must apply BACT. BACT is defined as the maximum degree of reduction achievable determined by a case-by-case review, taking into account energy, environmental, and economic impacts. The applicant has proposed BACT for each applicable case and has presented justification for the choice proposed. The justification is based upon the criteria listed above. BACT determinations are required to be at least as stringent as applicable NSPS limitations or requirements of the State Implementation Plan (SIP). Table 3 shows a summary of emissions limits and basis of requirements.

The applicant submitted a BACT analysis for the control of PM from the proposed No. 7 power boiler. The preferred candidate technology is:

- Multiclone dust collectors with reinjection of large wood char particles into the furnace, followed by
- an electrostatic precipitator.

The three alternative particulate control technologies also analyzed were:

- Wet scrubbers;
- Dry scrubbers; and
- Fabric filters.

The applicant's analysis was based upon many economic, energy, and environmental considerations. Pertinent to the EPA review of this analysis was that only the fabric filter alternative offered a potential environmental advantage over the ESP. The selection of the ESP over the fabric filters was based upon the potential fire hazard using wood fuel and the maintenance of filter bags considering the abrasive nature of wood ash. The applicant's analysis predicts the ESP emissions will be less than 50 percent of the NSPS standard of 0.1 pounds of PM per million Btu heat input. This is based upon the vendor's guarantee assuming a worst case ash content of 11 percent in coal and 3.75 percent in wood. Although actual PM emissions are expected to remain below the worst case calculated value of 0.049 pound per million BTU heat input (lb/MMBtu) the applicant proposes the NSPS limit of 0.1 lb/MMBtu

be established as BACT, because ESP performance is known to be reduced somewhat over the lifetime of equipment, and further, a design allowance must be made for continued temporary operation with a fraction of the 10 fields out of service.

EPA concurs that the proposed ESP equipment does constitute BACT for this case and that the NSPS standard of 0.1 lb/MMBtu will be achieved with this proposed technology.

The applicant has proposed that BACT for SO_2 emissions be represented by the NSPS standard of 1.2 pounds SO_2 per million Btu heat input. The applicant proposes to achieve this by burning low sulfur content (less than .75% S) Eastern or Mid Western bituminous coal.

The applicant has submitted alternate BACT candidates for SO_2 control; these are:

- Compliance (low sulfur) coal from other coal ranks;
- Coal cleaning prior to combustion; and
- Flue gas desulfurization (FGD).

The applicant's BACT review concluded that low sulfur bituminous coal would achieve the NSPS standard with the lowest economic impact and least technological uncertainty. EPA reviewed this analysis and questioned the availability of low sulfur coal over the lifetime of the proposed project. The applicant proposed to include in the equipment design necessary allowances to enable addition of FGD at any future date if and when a poor availability of low sulfur coal interfered with meeting the allowable emission standard of 1.2 lbs SO_2/MMBtu. With this condition, EPA concurs that the proposed use of less than .75 percent sulfur Eastern or Mid Western bituminous coal to achieve the NSPS emission limit does constitute BACT.

The applicant submitted a BACT analysis of PM control from fugitive and point sources associated with the coal preparation and handling. It is proposed to use surfactant sprays to minimize dust generation and enclosures for

critical operations. The applicant has considered some alternative additional controls, but rejected these because of economic impacts without material improvement of environmental impacts. EPA has reviewed the applicants proposal and concurs that it constitutes BACT for this case with the one additional requirement that the opacity limitation (less than 20%) required by NSPS 40 CFR 60 Subpart Y is applicable and shall be met.

The applicant proposed to control PM emissions from the ash handling system with a ventilation system controlled by fabric bag filters. It is proposed that PM emissions will be no greater than 0.5 pounds per hour from this system. EPA concurs that this technology and emission limit does constitute BACT for this case; however, it further determines that the opacity shall be no greater than 5 percent.

The applicant has submitted a BACT analysis for control of NO_x, VOC, and CO. He proposes to balance these emissions by controlling excess air and the ratio of overfire to underfire air rates. At the worst case conditions for NO_x control (100 percent coal fuel) the applicant proposes a limit of 0.6 lbs NO_x/MMBtu heat input. This corresponds to the NO_x limit established under the Florida State Implementation Plan BACT determination and is less than the NSPS requirements under 40 CFR 60 Subpart D. EPA has reviewed this proposed BACT and concurs it constitutes BACT for this case with the additional requirement that performance tests shall be run in accordance with the attached provisions "Use of Flue Gas Oxygen Meter as BACT for Combustion Controls." Thus, the BACT limit of 0.6 lb NO_x/MMBtu heat input from coal shall be an upper boundary with optimization of combustion conditions (i.e. excess air, and ratio of primary combustion air/overfire air) to minimize NO_x emissions with due consideration given to combustion efficiency and CO emissions.

Table 3 summarizes the allowable emission limits of all applicable pollutants and source facilities.

B. PSD Increment Impacts

Paragraph (k)(2) of the PSD regulations requires an analysis to ensure that no PSD increment will be violated. The applicable Class II area PSD increments are shown in Table 4. Class I area PSD increments are discussed in Section IV C below.

The applicant submitted an analysis to show the maximum impacts the proposed modification will have upon these increments. The analysis utilized the EPA approved Industrial Source Complex Model (ISC) to determine the maximum change in ambient air concentration projected for PM and SO_2. The data input to these model runs consisted of:

- Five years of surface meteorological data (1970-1974) collected at the Jacksonville Airport, and upper air data for the same time period measured over Waycross, Georgia;
- Maximum allowable emissions for the proposed new facilities;
- Creditable emissions increases from other Container Corporation increment consuming facilities; these are:
  - No. 5 recovery boiler and smelt tank (for construction under PSD-FL-002 issued 12/10/76); and
  - an increase in fuel oil sulfur content allowed under the Florida SIP on two existing power boilers (No. 4 and No. 5).
- Creditable emissions decreases which are part of this proposed project; these are:
  - Shut down of No. 6 power boiler;
  - Shut down of No. 3 recovery boiler and its associated smelt tank; and
  - Placing No. 3 power boiler on cold stand-by.

Other facility changes within 50 kilometers were reviewed to determine if interactions would occur in PSD increment impacts. Jacksonville Electric Authority (PSD-FL-010) was not included in this analysis because the Container Corporation application was determined to be complete one month prior to that of the Jacksonville Electric Authority. The area of impact does not extend to the site of a new boiler constructed by the Anheuser-Busch Company. No other increment consuming facilities were in the vicinity. Consistent with EPA policy for applications received prior to August 7, 1980 the impact of fugitive emissions associated with this project were not analyzed for increment impact. The modeled net changes to the ambient air concentrations due to the proposed project and all other emission changes are also shown in Table 4 and compared with the allowable PSD Class II area increments. EPA has reviewed the applicant's analysis and concurs that no PSD Class II area increments are threatened.

C. Class I Area Impacts

Two Class I areas are near the proposed modification. The Okefenokee Wildlife Wilderness Sanctuary and the Wolf Island National Wildlife Refuge and Wilderness Area are located approximately 64 kilometers west and 74 kilometers north of the mill, respectively.

The applicant analyzed the impact of the proposed modification upon these two Class I areas by including receptors on the Class I area boundaries in the increment analysis modeling runs. The maximum impact due to the net emission change for each Class I area and each averaging time is shown in Table 5. Also shown in Table 5 are the allowable Class I area increments. EPA concurs with the applicant's conclusion that no Class I area increment shall be threatened by the proposed modification, and further has determined that the air quality changes modeled for these two areas are so small as to constitute no affect.

D. NAAQS Impacts

Paragraph (k)(1) of the PSD regulations requires an analysis to ensure that no NAAQS will be violated. The applicable ambient standards are shown in Table 6.

The applicant submitted an analysis to show the maximum impacts the proposed modification will have upon these standards. This analysis considered:

- Monitored ambient air data measured by the Florida Department of Environmental Regulation at four monitoring sites within 3 kilometers of the Container Corporation (CAA) plant during 1977-1979;
- emissions of existing facilities at CCA, and of two nearby paper mills (ITT Rayonier and Gilman Paper Company) at allowable rates prior to 1979;
- emissions increases of existing facilities at CCA allowed since 1979; and
- emission increases and decreases associated with the proposed project.

The results of the applicant's analysis for PM, SO_2, and NO_x projected ambient maximum concentrations for the various averaging times. These maximum ambient concentrations calculated by the applicant's analysis are also shown in Table 6. By comparing these with the applicable NAAQS the applicant has concluded no threat to the standards will occur.

EPA has further noted that:

- Since the PM concentration changes of the net emissions change from the modification (see PSD Increment Analysis, Section IV B above) are not significant, no refined analysis of PM impact upon the PM standards is required; and
- The summation of the maximum monitored SO_2 concentrations (not corrected for existing facility impacts) and the maximum modeled SO_2 concentrations from all existing and new proposed facilities are less than the applicable NAAQS. These are also shown in Table 6.

On the basis of a review of the applicant's analysis of NAAQS impacts and the further worst case evidence EPA concurs with the applicant's conclusion that no NAAQS will be threatened by the proposed project.

E. Growth Impacts

The proposed project will not require additional employment nor will product production be increased; therefore, no local commercial or industrial growth will occur. The changes in incoming fuel transportation will be minimal and handled with existing facilities with a negligible change in secondary emissions.

F. Soils, Vegetation, and Visibility Impacts

The applicant analyzed impacts upon soils, vegetation and visibility due to the proposed project. The analysis includes a discussion of the susceptibility of the commercial crops (tobacco and corn) and the trees typical of the area (oaks and red maple) and concludes these range from intermediate sensitivity downward to resistant to SO_2. No vegetation showing extreme sensitivity is known in this area. The applicant concluded the impacts would be negligible. EPA has reviewed this analysis and concurs with the applicant's conclusion on the basis of the applicant's analysis and also because the impacts do not threaten secondary NAAQS standards which have been established considering these welfare related criteria.

V. Conclusions

EPA Region IV proposes a preliminary determination of approval with conditions for the construction of the modification to the Container Corporation of America's Fernandina Beach Paper Mill proposed in its application submitted April 25, 1980. The determination is made on the basis of information contained in the application and in additional information dated May 28, June 4, and November 12, 1980 received from the applicant. The specific conditions set forth in the permit are as follows:

1. The new facilities shall be constructed in accordance with the capacities and specifications stated in the application and summarized in Table 1. Specifically, at least 30 days prior to the beginning of construction, the permittee shall submit plans with sufficient details to adequately ensure available plant space for subsequent installation of a flue gas desulfurization unit if the availability of low sulfur coal threatens continued compliance with Condition 4 (below).

2. Visible emissions from all fugitive or point sources within the coal preparation and handling system shall not exhibit 20 percent opacity or greater in accordance with the NSPS for coal preparation plants (40 CFR 60 Subpart Y).
3. Particulate matter emissions from the ash handling facility shall not exceed 0.5 pounds per hour and opacity shall not exceed 5 percent while operating at maximum operating rate.
4. Emissions of PM, SO_2, and NO_x from the new No. 7 power boiler shall not exceed the mass rate shown in Table 7 while operating at the maximum operating rates shown for each fuel type. At lesser operating rates the emissions shall not exceed the specified emissions limits per unit heat input.
5. Visible emissions from the No. 7 power boiler shall not exhibit greater than 20 percent opacity except for one 6-minute period per hour of not more than 27 percent opacity (NSPS 40 CFR 60 Subpart D).
6. The applicant shall optimize combustion conditions to minimize NO_x formation in accordance with the attached provisions, "Use of Flue Gas Oxygen Meter as BACT for Combustion Controls."
7. The applicant shall install, calibrate, maintain, and operate continuous monitoring systems for measuring opacity, SO_2 emissions, NO_x emissions, either oxygen or carbon dioxide (CO_2), and fuel input rates of coal and wood waste on No. 7 power boiler in accordance with the provisions of 40 CFR 60 Subpart D paragraph 60.45. The applicant shall also comply with all other applicable requirements of 40 CFR 60 Subpart D (NSPS).
8. Compliance with the emission limits (Conditions 2-6) shall be determined by performance tests scheduled in accordance with the attached General Conditions. Performance testing for the mass emissions rate from the fly ash handling system is not required providing compliance with the opacity standard is demonstrated and maintained. The performance tests

shall be conducted in accordance with the provisions of reference methods in Appendix A of 40 CFR 60, except as provided under 40 CFR 60.8(b), as follows:

a. Method 1 for sample and velocity traverses;

b. Method 3 for gas analysis;

c. Method 5 for concentration of PM and associated moisture content;

d. Method 6 for SO_2 concentrations;

e. Method 7 for NO_x concentrations;

f. Method 9 for visible emissions.

All other procedures for these compliance tests shall be in accordance with 40 CFR 60 Subpart D paragraph 60.46.

Each facility shall operate within 10 percent of maximum operating rate during sampling. The parameters of operating rate, control equipment variables and all continuous monitoring results shall be recorded during compliance testing and made a part of the reported results.

The performance test for visible emissions from No. 7 power boiler shall be observed during the compliance tests for the PM mass emissions rate.

9. The permittee shall apply a chemical stabilizer to the active and inactive storage piles as needed to maintain an opacity of equal to or below 20 percent. Chemicals will be added in accordance with the manufacturer's recommendations.

10. The permittee shall operate a wet suppression spray system at all car dumps and shall enclose conveyors and transfer points to maintain an opacity of equal to or below 20 percent.

11. The applicant shall monitor fuel input to the No. 7 boiler and maintain a daily record of fuels fired consistent with the provisions of attached General Condition 4.

12. The source shall comply with the requirements of the attached General Conditions.

Table 1

Project Description Summary

Facility	Operating Capacity
A. New or Reconstructed	
1. No. 7 Power Boiler	1021/1084[a,b]
2. Coal Handling	41[c]
3. Ash Handling	4[c]
B. Existing (To be shutdown or placed on "cold" standby)	
1. No. 6 Power Boiler	180[a]
2. No. 3 Power Boiler[d]	227[a]
3. No. 3 Recovery Boiler	248[a]
4. No. 3 Smelt Tank	8.42[e]

[a]Millions Btu/hour (heat input).

[b]100% coal/28.7% heat input from wood and 71.3% from coal.

[c]Tons/hour.

[d]No. 3 boiler on "cold" standby; not to be used except when a larger unit is temporarily and completely out of service.

[e]Tons/hour of smelt.

All Recs could be on cold stand-by

Only #3 boiler most always to operate while #7 boiler is operating

Working should have been more specific.

Table 2

Summary of Emissions

(tons per year)

Facility	PM	SO_2	NO_x	VOC	CO
New Construction					
Coal Storage and Coal Handling System	75[a]	0	0	0	0
Ash Handling System	2	0	0	0	0
No. 7 Power Boiler	472	5363	2681	56	410
Total Allowed Increase[b]	549	5363	2681	56	410
To be Shut Down					
No. 6 Power Boiler	62	1737	260	3	21
No. 3 Power Boiler	80	2185	330	3	28
No. 3 Recovery Boiler	163	333	-	-	136
No. 3 Smelt Tank	56	0	0	0	0
Total Actual Decrease[c]	361	4255	590	6	185
Net Emissions Increase	188	1108	2091	50	225
Significant Emissions Increase	25	40	40	40	100
PSD Review Required	yes	yes	yes	yes	yes

[a]Rough EPA approximation of fugitive emissions from coal storage and handling.

[b]Based upon worst case allowed emissions at full time operating schedule.

[c]Based upon actual prior operating time.

Table 3

Allowable Emission Limits

Facility	Emission Limits lb/hr	Opacity	lb/MMBtu	Basis
Coal Handling System		20%		NSPS, BACT
Ash Handling System	0.5[a]	5%		BACT
No. 7 Power Boiler (fueled by coal alone)				
PM	102	20%	0.1	NSPS, BACT
SO_2	1225		1.2	NSPS, BACT
NO_x	613		0.6[a,c]	BACT[e]
CO	d		d	BACT[e]
No. 7 Power Boiler (with a maximum of 71.3% of heat input from coal and a minimum of 28.&% waste)				
PM	108	20%	0.1	NSPS,BACT
SO_2	930		1.2 coal[a] 0.01 ww[a]	BACT
NO_x	516		0.6 coal[a,c] 0.17 ww[a,f]	BACT[e]
CO	d		d d	BACT[e]

[a]Proposed by applicant.
[b]Determined by EPA consistent with mass rate
[c]Based upon manufacturer's guarantee.
[d]Emission limits will be determined by compliance testing. Worst case conditions will be used.
[e]BACT control is to be established in accordance with Attachment II.
[f]Based upon TRW, 1979; Air Pollutant Emission Factors for Wood-Fired Boilers, EPA Contract 68-02-2613, Task No. 30, Durham, NC, Table 3-2, EPA-600/7-79-219.

Table 4

Analysis of Impacts Upon
Class II Area PSD Increments

Pollutant/ Averaging Time	Concentrations, ug/m^3 Net Change Modeled	Allowable Increment	Percent of Increment Consumed
PM			
Annual	-0.3[a](-0.2[b])	19[b]	None
24-Hour	1.1	37[c]	Not Significant
SO_2			
Annual	1.3	20[a]	6.5
24-Hour	28.1	91[c]	30.9
3-Hour	93.3	512[c]	18.2

[a]Arithmetic mean.

[b]Geometric mean.

[c]Not to be exceeded more than once per year.

[d]Modeled concentration increase (1.1 ug/m^3) is below the significance level (5 ug/m^3) published 43FR26398 June 19, 1978.

Table 5

Maximum Modeled Increase to
Ambient Air at Class I Areas
(All Concentrations, ug/m^3)

	Okefenokee	Wolf Island	Class I Increments
SO_2			
Annual	0.16	0.15	2
24-Hour	.63	.22	5
3-Hour	1.54	1.75	25
PM			
Annual	Negative	Negative	5
24-Hour	0.01	0.00	10

Table 6

Analysis of Impacts Upon NAAQS

(Ambient Concentrations, ug/m^3)

Pollutant/ Averaging Time	Applicant's Analysis				Worst Case Analysis		
	Background	Modeled	Total	NAAQS[a]	Monitored	Modeled	Total
PM							
Annual	39.5[d] (56.7)[c]	4.5[c]	44[d]	60[d]	Not Required		
24-Hour	86.7	24.7	111.4	150	Not Required		
SO_2							
Annual	26.1	14.4	40.5	80	46	14	60
24-Hour	75.5	96.0	171.5	365	219	96	315
3-Hour	75.5	374.4	449.9	1300	493[e]	374	867
NO_x							
Annual	30.0[f]	3.0	33.0	100			

[a]The lower concentration of either primary or secondary standard.

[b]Maximum monitored value excluding measurements identified by Florida DER as caused by known upset at ITT, Rayonier, and excluding measurements made with no temperature control on gas bubbler.

[c]Arithmetic mean.

[d]Geometric mean.

[e]No 3-hour data available; therefore, this is ratioed from 24-hour data.

[f]Assumed by applicant as 150% of an EPA suggested value for rural locations.

Table 7
Allowable Emissions Limits
for Boiler No. 7

Emission Unit	Maximum Heat Input (MMBtu/hr)	PM	SO_2	NO_x
Boiler No. 7				
Coal Firing	1021			
lb/hr		102	1225	613
lb/MMBtu		0.1	1.2	0.6
Wood Firing	1084			
lb/hr		108	11	184
lb/MMBtu		0.1	0.01	0.17
Combination Wood and Coal	1084			
lb/hr		108	a	b
lb/MMBtu		0.1	a	b

[a]The SO_2 and NO_x emissions limits for combination firing of coal and wood is prorated by the heat input from each fuel fired determined as follows:

$$SO_2 \text{ Emission Limit in lb/MMBtu} = \frac{\text{Wood Btu Input} \times (0.01) + \text{Coal Btu Input} \times (1.2)}{\text{Total Btu Input}}$$

$$NO_x \text{ Emission Limit in lb/MMBtu} = \frac{\text{Wood Btu Input} \times (0.17) + \text{Coal Btu Input} \times (0.6)}{\text{Total Btu Input}}$$

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 and/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 30365

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.