STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2500 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

MEMORANDUM

TO: Roger C. Sherwood, Georgia-Pacific Corporation
David Buff, ESE Consultants
Johnny Cole, FDER, St. Johns River Subdistrict

FROM: C. H. Thomas, Bureau of Air Quality Management

DATE: September 29, 1981

SUBJ: Preliminary Determination-Georgia-Pacific Corporation, Proposed Constructions that will Double Production Capacity

Attached is one copy of the applications, Technical Evaluation and Preliminary Determination, BACT determinations and proposed permits to construct a recovery boiler and associated smelt tanks (2), lime kiln and combination bark/peat fired boiler at the Georgia-Pacific Kraft Pulp Mill near Palatka, Putnam County, Florida.

Please submit any comments which you wish to have considered concerning this section, in writing, to Bill Thomas of the Bureau of Air Quality Management.

CF/bjm

Attachment

Public Notice

The Department intends to issue permits to Georgia-Pacific Corporation for the construction of a recovery boiler, two smelt tanks, a lime kiln and a combination steam generator fired with bark and/or peat to modify their existing kraft pulp mill in Palatka, Florida. The permit will include conditions to assure compliance with Chapter 17-2, Florida Administrative Code (FAC).

Any person wishing to file comments on this proposed action may do so by submitting such comments in writing to:

Mr. Clair Fancy
Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Any comments received within thirty (30) days after publication of this notice will be considered and noted in the Department's final determination.

Any person whose substantial interest would be affected by the Department's intended action on this permit may request an administrative hearing by filing a petition as set forth in Section 28-5.15, FAC, within fourteen (14) days of the date of this notice with:

Ms. Mary Clark
Office of General Counsel
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

PROPOSED AGENCY ACTION

The Florida Department of Environmental Regulation (DER) has received applications from and intends to issue Construction permits to Georgia-Pacific Corporation for the modification of a Kraft Pulp Mill, located at their facility near Palatka, Putnam County, Florida. A determination of Best Available Control Technology was required. Copies of the applications, BACT Determination, Technical Evaluation, and Departmental Intent are available for inspection at the following offices:

FDER, St. Johns River Subdistrict Office

3426 Bills Road

Jacksonville, Florida 32217

DER Bureau of Air Qual. Mgmt.

2600 Blair Stone Road

Tallahassee, Florida 32301

Comments on this action shall be submitted in writing to C. H. Fancy of the Tallahassee office, within 30 days of this notice.

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

Palatka Daily News
1825 St Johns Ave
Palatka FL 32077

9/18/81

Dear Sir:

We are forwarding to you a legal/~~classified~~ advertisement to be published:

9/28/81 (ONCE)

Subject: Public Notice - Proposed Action

To ensure prompt payment, please send an invoice and proof of publication for legal ads to the address below:

Department of Environmental Regulation
PURCHASING OFFICE
2600 Blair Stone Road
Tallahassee, FL 32301

If you have any questions, please contact us at 904/488/0870.

Sincerely,

William H. Wallace
Purchasing Office

Enclosure: (1)

Technical Evaluation

and

Preliminary Determination

Georgia-Pacific Corporation

Palatka, Florida

Application Numbers:

AC 54-43773
AC 54-43791
AC 54-43795

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

I. PROJECT DESCRIPTION

A. Applicant

Georgia-Pacific Corporation
P. O. Box 919
Palatka, Florida 32077

B. Project and Location

The applicant proposes to increase unbleached pulp production by 1200 tons per day at their existing kraft pulp mill in Putnam County. This modification will be accomplished by the construction of a recovery boiler, two smelt tanks, a lime kiln, and a combination boiler. The proposed combination boiler will be fired with bark and/or peat to produce a maximum 700,000 lbs./hr. of steam while the recovery boiler will burn black liquor solids to produce a maximum 607,500 lbs./hr. of steam. The combination boiler will use No. 6 Fuel Oil as a supplementary fuel for startup, shutdown, emergencies, and system checking, with a consumption rate not to exceed 40 barrels per hour and a maximum heat input of 250 million Btu per hour. The 320 ton/day lime kiln will be fired with No. 6 Fuel Oil with a consumption rate not to exceed 16.6 barrels per hour and a maximum heat input of 102 million Btu per hour. The sources are expected to operate continuously, a total of 8760 hours per year.

The plant location is north of S.R. 216 and west of U.S. 17 in Palatka, Florida. UTM coordinates are 434.0 km. East and 3283.4 km. North.

C. Process and Controls

The kraft process involves the cooking of wood chips under pressure in the presence of a cooking liquor in either a batch or a continuous digester. The cooking liquor, or "white liquor" consisting of an aqueous solution of sodium sulfide and sodium hydroxide, dissolves the lignin that binds the cellulose fibers together.

When cooking is completed, the contents of the digester are forced into the blow tank. Here the major portion of the spent cooking liquor, which contains the dissolved lignin, is drained, and the pulp enters the initial stage of washing. From the blow tank the pulp passes through the knotter where unreacted chunks of wood are removed. The pulp is then washed and, in some mills, bleached before being pressed and dried into the finished product.

It is economically necessary to recover both the inorganic cooking chemicals and the heat content of the spent "black liquor," which is separated from the cooked pulp. Recovery is accomplished by first concentrating the liquor to a level that will support combustion and then feeding it to a furnace where burning and chemical recovery take place.

Initial concentration of the weak black liquor, which contains about 15 percent solids, occurs in the multiple-effect evaporator. Here process steam is passed countercurrent to the liquor in a series of evaporator tubes that increase the solids content to 40 to 55 percent. Further concentration is then effected in the direct contact evaporator. This is generally a scrubbing device (a cyclonic or venturi scrubber or a cascade evaporator) in which hot combustion gases from the recovery furnace mix with the incoming black liquor to raise its solids content to 55 to 70 percent. The black liquor concentration is then sprayed into the nondirect contact recovery furnace where the organic content supports combustion. The inorganic compounds fall to the bottom of the furnace and are discharged to the smelt dissolving tank to form a solution called "green liquor". The green liquor is then conveyed to a causticizer where slaked lime (calcium hydroxide) is added to convert the solution back to white liquor, which can be reused in subsequent cooks. Residual lime sludge from the causticizer can be recycled after being dewatered and calcined in the hot lime kiln.

The combination boiler will be serviced with an electrostatic precipitator (ESP) to remove particulate matter (PM). The expected efficiency of this control device is 99+%.

The non-direct contact recovery boiler's PM emissions will be controlled with an ESP with an expected collection efficiency of 99%. PM emissions will be controlled with wet scrubbers. Expected collection efficiency is 98%.

The lime kiln's PM emissions will be controlled with a high energy venturi scrubber. Expected collection efficiency is 99.7%.

II. Rule Applicability

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code (FAC).

The proposed project is located in Putnam County, which is designated attainment area for all criteria pollutants. The mill is more than 50 km. from any particulate matter (PM) or SO_2 nonattainment area and more than 100 km. from any Class I area.

The potential and projected emissions for the proposed project are listed in the following table.

Pollutant	Potential (uncontrolled) Emission Rate (tons/year)	Applicant's Projected Actual Emission Rate (tons/year)
PM	85,678	1,441
SO_2	4,046	3,341
NO_x	1,918	1,765
VOC	634	591
CO	7,123	6,855
Total Reduced Sulfur (TRS)	3,197	32

Since the proposed project is a physical change to an existing major emitting facility which would result in an increase in potential emissions of either PM or SO_2 over the baseline, it constitutes a modification subject to review under State prevention of significant deterioration (PSD) regulations (17-2.04(6), FAC). (In this case, potential emissions of both PM and SO_2 will increase, but only SO_2 concentrations will increase over the baseline. The post-1974 shut-down of lime kilns 1-3 and recovery boilers 1-3 at the mill have expanded the PSD increment such that PM emissions from the proposed project will not result in concentrations over the baseline). PSD review consists of a determination of best available control technology (BACT) for all pollutants emitted and an air quality impact analysis to demonstrate that the project would not cause or contribute to a violation of any ambient air quality standard or PSD increment.

The proposed combination steam generator fuel is bark and/or peat. Peat and lignite form a transition layer between biomasses and coals (Tappi-August 1981), therefore peat, being neither a fossil-fuel nor a carbonaceous fuel as defined in 17-2. FAC, is presently considered an unclassified fuel. Bark, however, is defined as "wood residue" in NSPS, Subpart D, subsection 60.41 (e), and as a "carbonaceous fuel" in 17-2.02 (21) FAC.

BACT has been established on bark fired steam generators for particulate matter (PM) and that limit is 0.1 lbs. per million Btu heat input. The technology to fire peat is not unknown and the Department believes that manufacturers of emission control devices now have the expertise to build equipment for the level of particulate control required for this installation and in limiting peat PM emissions to 0.1 lbs. per million Btu heat input as BACT.

In addition, back up fuel will be No. 6 Fuel Oil, a fossil fuel, and shall have a maximum heat input of 250 million Btu per hour. Since the minimum level to trigger NSPS, 40 CFR 60, Subpart D, for fossil fuel fired steam generators, or combinations of fossil fuel and wood residue (bark), is greater than 250 million Btu per hour heat input, 40 CFR 60, Subpart D does not apply as a mandatory limit. However, practical control levels do not experience a "step function" at exactly 250 million Btu per hour heat input, but would have a smooth transition through the large to small boiler size range based primarily on economics. Therefore, the Department has determined that through the BACT process the limits of 40 CFR 60, Subpart D do furnish a valuable and valid guide. Consequently, emission limits for SO_2, NO_x, and visible emissions (VE) will be imposed in accordance with the BACT determination for the combination steam generator.

Although not yet adopted at the State level, the federal NSPS for kraft pulp mills (40 CFR 60.280, Subpart BB) will be considered in the BACT determination for PM and TRS emissions from the recovery boiler, smelt tanks, and lime kiln. Also, the emission limit for SO_2 for the recovery boiler has been declared by EPA as BACT for this class of source.

III. Summary of Emissions and Air Quality Analysis

A. Emission Limitations

The allowable pollutant emissions from this facility, by source, will be:

Source	Pollutant	Emission Limiting Standard: Emission Limitation	Plant Allowable Emissions (Maximum lbs./hr.)	
Combination Boiler No. 5			Bark	Peat
	Particulates	0.1 lb/10^6 Btu heat input	108.36	100.59
	SO_2	0.65 lb/10^6 Btu heat input	704.34	653.84
	NO_x	0.30 lb/10^6 Btu heat input	325.08	301.77
	VE	20% maximum Opacity (except for one 6-minute period per hour of not more than 27% Opacity).		
Recovery Boiler No.5	Particulates	0.044 grains/DSCF (corrected to 8% oxygen)	75.4	
	SO_2	50 ppm	97.96	
	TRS	5 ppm by volume on a dry basis (corrected to 8% oxygen)	5.2	
	VE	35% maximum Opacity		
Smelt Tanks No. 5	Particulates	0.2 lb/ton black liquor solids (dry weight)	15.0 (Total)	
	TRS	0.0168 lb/ton black liquor solids (dry weight)	1.26 (Total)	

Emission Limiting Standard

Source	Pollutant	Emission Limitation	Plant Allowable Emissions (Maximum lbs./hr.)
Lime Kiln No. 5	Particulates	0.13 grains/DSCF (corrected to 10% oxygen)	29.31
	TRS	8 ppm by volume on a dry basis (corrected to 10% oxygen)	1.09
	VE	20% maximum Opacity	

The permitted emissions are in compliance with all applicable requirements of Chapter 17-2 (FAC), referenced New Source Performance Standards (NSPS), and what has been determined to be BACT (see Attachment A).

B. Air Quality Impact Analysis

The State PSD review for PM and SO_2 requires an air quality impact analysis which includes a PSD increment analysis and a Florida Ambient Air Quality Standards (FAAQS) analysis. The PSD increment and FAAQS analyses depend on air quality modeling carried out in accordance with FDER-approved methods.

Based on these required analyses, FDER has reasonable assurance that the Georgia-Pacific modification, as described in this permit and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A discussion of the required analyses follows.

1. Modeling Methodology

The Industrial Source Complex (ISC) model, an FDER and EPA-approved dispersion model, was used to determine the maximum predicted annual concentrations and to identify the worst-case short-term meteorological conditions which would affect emissions from Georgia-Pacific after the proposed modification is completed. The maximum short-term impacts were refined using the ISC model with a 0.1 kilometer spacing between receptor rings and only the days on which worst-case meteorological conditions occurred.

The surface meteorological data used in the model were National Weather Service data collected at Jacksonville, Florida, during the period 1970-74. Upper air meteorological data used in the model were collected during the same period at Waycross, Georgia.

2. Analysis of Existing Air Quality

Preconstruction ambient monitoring for total suspended particulate (TSP) and SO_2 is being conducted at the Georgia-Pacific site. Since the results of the monitoring program are not yet available, conservative background TSP concentrations of 40 ug/m^3, annual average, and 80 ug/m^3, 24-hour average, were assumed in the air quality impact analysis. Since all significant sources of SO_2 within 50 km of the mill were included in the modeling, a background concentration of 0 ug/m^3 was assumed for SO_2.

3. PSD Increment Analysis

The Georgia-Pacific mill is located in an area where the Class II PSD increments apply. There is no Class I area within 100 km of the mill site.

In addition to the proposed modification, increment consumption is affected by the post-1974 shut down of lime kilns 1-3 and recovery boilers 1-3. In combination with these shut downs, the proposed modification will result in no increase in TSP concentrations over the baseline. As shown in the following table, the predicted maximum SO_2 increment consumption due to the shut downs and the proposed modification will not exceed allowable increments. The highest, second-highest short-term predicted concentrations are given in the table since five years of meteorological data were used in the modeling.

Maximum SO_2 Increment Consumption

(ug/m^3)

	Averaging Time		
	3-hour	24-hour	Annual
Class II PSD Increment Consumed by Georgia-Pacific	99	15	<5
Allowable Class II Increment	512	91	20

4. Ambient Air Quality Standards Analysis

State PSD regulations require the permit applicant to demonstrate that, given existing air quality in an area, a proposed emissions increase subject to PSD review will not cause or contribute to any violation of ambient air quality standards. As shown in the following table, predicted maximum ground-level TSP and SO_2 concentrations resulting from total mill emissions after the proposed modification will be below the FAAQS. The highest, second-highest, short-term predicted values are given in this table since five years of meteorological data were used in the modeling.

	Predicted Concentration* (ug/m^3)				
	3-hour SO_2	24-hour SO_2	Annual SO_2	24-hour TSP	Annual TSP
Maximum Georgia-Pacific Impact	410	116	22	108	44
FAAQS	1,300	260	60	150	66

*Includes background TSP concentrations of 80 ug/m^3, 24-hour average, and 40 ug/m^3, annual average.

IV. Conclusions

FDER proposes a preliminary determination of approval with conditions for the construction of the proposed combination boiler, recovery boiler, two smelt tanks, and lime kiln by Georgia-Pacific Corporation. The determination is made on the basis of information contained in the application and in the additional information dated June 26, June 30, July 31, and August 25, 1981 (Attachments B).

The General and Specific Conditions listed in the proposed permits (attached) will assure compliance with all applicable requirements of Chapter 17-2 (FAC), NSPS, and what has been determined as BACT.

ATTACHMENT A

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee	
To:	Loctn.:
To:	Loctn.:
To:	Loctn.:
From:	Date:

TO: District, Subdistrict and Local Program Air Engineers

FROM: Ed Palagyi, EP, BACT Coordinator

DATE: July 15, 1981

SUBJ: BACT as determined for Georgia - Pacific Corporation

Attached please find one copy of the BACT as determined by the Florida Department of Environmental Regulation for the subject applicant.

Should you have any questions regarding this BACT, please contact me at (904) 488-1344 or Suncom 278-1344.

EP:dav

Best Available Control Technology (BACT) Determination

Georgia-Pacific Corporation

Putnam County, Florida

The applicant plans to increase unbleached pulp production by 1200 tons per day at their existing facility located in Palatka, Florida. To accomplish this goal, a recovery boiler, two smelt tanks, a lime kiln, and a combination steam generator fired with bark and/or peat will be constructed. The steam generator will use No. 6 oil as a supplementary fuel with a consumption rate not be exceed 40 barrels per hour. The lime kiln will be fired with No. 6 fuel oil at a maximum heat input of 102 million Btu per hour. The sources are scheduled to operate continuously, a total of 8760 hours per year.

BACT Determination Requested by the Applicant:

	Pollutant	Emission Limit
A.	Steam Generator No. 5:	
	Particulates	0.2 lb/million Btu input
	SO_2	0.65 lb/million Btu input
	NO_x, VOC, CO	Boiler design & proper operation
B.	Recovery Boiler No. 5:	
	Particulates	0.044 grains/DSCF
	TRS	5 ppm dry basis as H_2S
	SO_2	Proper process control & wet scrubber
C.	Smelt Tank Vents:	
	Particulates	0.2 lb/ton black liquor solids (dry wt.)
	TRS	0.0168 lb/ton black liquor solids (dry wt.)
	SO_2	Proper process control & wet scrubber
D.	Lime Kiln No. 5:	
	Particulates	0.13 grains/DSCF when burning liquid fuel
	TRS	8 ppm by volume (dry basis)
	Others	Proper kiln design & operation

Date of Receipt of a BACT Application:

June 2, 1981

Date of Publication in the Florida Administrative Weekly:

June 5, 1981

Review Group Members:

The BACT determination was made based on recommendations from Bruce Mitchell and John Svec, BAQM New Source Review Section; Steve Pace, Jacksonville Bio-Environmental Services; and Larry George, BAQM Air Modeling Section.

BACT Determination by DER:

A. 700,000 lb/hr Steam Generator No. 5:

Pollutant	Emission Limit (lb/million Btu heat input)
Particulates	0.10
SO_2	0.65
NO_x	0.30
Visible Emissions	20% maximum opacity except for one six-minute period per hour of not more than 27% opacity

B. Black Liquor Recovery Boiler No. 5:

Pollutant	Emission Limit
Particulates	0.044 grains/DSCF corrected to 8 percent oxygen
Total Reduced Sulfur (TRS)	5 ppm by volume on a dry basis, corrected to 8% oxygen
SO_2	50 ppm
Visible Emissions	Maximum 35% opacity

C. Smelt Tank Vents:

Pollutant	Emission Limit
Particulates	0.2 lb/ton black liquor solids (dry weight)
TRS	0.0168 lb/ton black liquor solids (dry weight)

D. Lime Kiln No. 5:

Pollutant	Emission Limit
Particulates	0.13 grains/DSCF corrected to 10% oxygen
TRS	8 ppm by volume on a dry basis, corrected to 10% oxygen
Visible Emissions	Maximum 20% opacity

Justification of DER Determination:

The applicant proposes to use peat as a fuel in the steam generator. The precursor of coal is peat, which is formed by bacterial and chemical action on biological debris. Subsequent actions of heat, pressure and other physical phenomena metamorphosed the peat to the various ranks of coal as we know them today. (Ref: Chemical Engineers Handbook, fifth edition). Peat is determined to be a solid fossil fuel in this determination.

The emissions limits determined as BACT for the combination steam generator for particulates, SO_2, NO_x and percent opacity are equal to, or more stringent than the New Source Performance Standards (NSPS), Subpart D. Carbon monoxide does not lend itself to exhaust gas removal techniques. The control of its formation by following the boiler design firing parameters is determined as BACT. The reference methods as provided under subsection 60.46 of the NSPS, Subpart D, shall be used to determine compliance.

The emission limits determined as BACT for the recovery furnace pollutants for particulates, total reduced sulfur (TRS), SO_2 and opacity are equal to NSPS, Subpart BB. The moisture content of the black liquor and the reducing atmosphere above the smelt bed tend to inhibit both flame temperature and oxygen levels in the combustion zone. This normally limits the concentration of NO_x emitted. BACT for the control of NO_x and CO is to maintain furnace operation within range of the design parameters.

The emission limits determined as BACT for the Smelt Tanks' pollutants for particulates and TRS are equal to NSPS, Subpart BB.

The emission limits determined as BACT for the Lime Kiln pollutants for particulates and TRS are equal to NSPS, Subpart BB. The SO_2 emissions are normally minimized because the CaO can act as an efficient adsorption and reaction medium to convert SO_x to $CaSO_4$. Consequently, emission limits for SO_x were not included in this determination.

The reference methods as provided under subsection 60.285 of the NSPS, Subpart BB, shall be used to determine compliance for the recovery furnace, smelt tanks and lime kiln.

The Department has reasonable assurance that, at the levels determined as BACT, emissions from the proposed modification would not cause or contribute to a violation of any ambient air quality standard or PSD increment.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended By:

(for) Steve Smallwood, Chief, BAQM

Date: 7/13/81

Approved:

Victoria J. Tschinkel, Secretary

Date: 7/13/81

SS:EP:LG:dav

Steam / its generation and use

Babcock & Wilcox
161 East 42nd Street, New York, N.Y. 10017

Thirty-ninth edition

Library of Congress Catalog Card Number: 77-90791 *Printed in the United States of America.*

Table 4. The countries in southwest Asia have, by far, most of the known reserves of petroleum with 45.2%. North Africa and Middle South Asia are next with 11.7% and 9.8%. The U.S.S.R. is fourth with 8.9%. North and Middle America, including Alaska and Canada, is sixth with 7.65%.

The Organization of Petroleum Exporting Countries (OPEC) is an international cartel that has gained dominance in the petroleum industry over the past ten years. Table 5 shows how the OPEC nations dominate world oil production. Table 6 shows how their revenues have grown in the years 1971 through 1974. It also gives the member nations of OPEC.

Table 2
Solid fossil fuel resources by continents and nations with major resources, 1974
(Million metric tons)

Country or Continent	Economic Reserves Recoverable	Economic Reserves Total	Total Resources
U.S.S.R.	136,600	273,200	5,713,600
China, P.R. of	80,000	300,000	1,000,000
Rest of Asia	17,549	40,479	108,053
United States	181,781	363,562	2,924,503
Canada	5,537	9,034	108,777
Latin America	2,803	9,201	32,928
Europe	126,775	319,807	607,521
Africa	15,628	30,291	58,844
Oceania	24,518	74,699	199,654
Total	591,191	1,402,274	10,753,880

Source, World Energy Conference, *Survey of Energy Sources*, 1974.

Natural gas

The natural gas reserves are somewhat different with Russia having the greatest amount, 32.6%, and North and Middle America second with 19.88%. See the natural gas tabulation on Table 4.

Oil shale

Oil shale deposits are widely distributed throughout the world with the largest reserves being in the United States and Canada. Table 7 shows the countries with the largest reserves. The production of oil from shale oil has not progressed past the pilot plant stage in the United States. This is primarily because foreign oil is cheaper than oil extracted from shale.

Wood

Forest lands of the world are estimated at 9.6 billion acres, equivalent to about 27% of the land area of the world. The productive forest area is estimated to be about 6.4 billion acres. Of this, about 4 billion acres may be considered as economically accessible.

Until the latter part of the nineteenth century, when it was replaced by coal, wood was the principal source of heat energy. Wood is no longer a major factor as a source of heat energy because of the depletion of the forests and the increasing demands for wood as lumber and in the production of paper, plywood, rayon and other products. Today the burning of wood and bark for steam generation is largely confined to locations where it is available as a by-product or waste from the lumber, furniture, ply-

Table 3
World production of solid fossil fuels by rank and nation, 1971
(Thousand metric tons—2205 lb/ton)

Nation or Area	Anthracite	Bituminous	Brown Coal or Lignite	Peat°	Total	Percent of World Production
U.S.S.R.	79,000	404,000	154,000	57,000	694,000	22.7
United States	8,830	495,300	5,800		509,930	16.7
China, P.R. of	20,000	390,000°°	(Not reported)		410,000	13.5
Canada		14,600	3,000		17,600	0.6
Europe						
Western	27,800	132,300	111,100	320	271,520	8.9
Southern	3,140	8,650	46,270		58,260	1.9
Northern	3,760	143,550	90	5,020	152,420	5.0
Eastern	200	187,700	447,730	50	635,680	20.6
Total	34,900	472,200	605,190	5,390	1,117,680	36.4
India		69,120	3,700		72,820	2.4
Australia		48,920	23,390		72,310	2.4
South Africa	1,680	56,840			58,520	1.9
Japan	1,040	32,940	130		34,110	1.1
North Korea	21,800	6,170°°	(Not reported)		27,970	0.9
South Korea	12,400				12,400	0.4
Turkey		4,180	5,820		10,000	0.3
Rest of Asia	3,000	8,150°°	450		11,600	0.3
Rest of Oceania		1,920	160		2,080	0.1
Rest of Africa	430	4,970			5,400	0.2
Latin America	7	10,970			10,980	0.1
Total	183,090	2,020,280	801,640	62,390	3,067,400	100.0

° Includes peat used for fuel only.

°° Includes some lignite for Peoples Republic of China, Peoples Republic of Korea, Mongolia and Pakistan.

Source, World Energy Conference, *Survey of Energy Sources*, 1974.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To: _____ Loctn.: _____
To: _____ Loctn.: _____
To: _____ Loctn.: _____
From: _____ Date: _____

Reply Optional [ ] Reply Required [ ] Info. Only [ ]
Date Due: _____ Date Due: _____

TO: District, Subdistrict and Local Program Air Engineers

FROM: Ed Palagyi, BACT Coordinator

DATE: September 25, 1981

SUBJ: Revised BACT as determined for Georgia-Pacific Corporation.

The attached BACT amends the determination issued to subject applicant on July 13, 1981. Should you have any question regarding this amendment, please contact me at (904) 488-1344 or Suncom 278-1344.

ED/bjm

Attachment

Best Available Control Technology (BACT) Determination

Amendment

Georgia-Pacific Corporation

Putnam County

The applicant plans to increase unbleached pulp production at their facility located in Palatka, Florida. A BACT determination was issued July 13, 1981.

BACT Revision Requested by the Applicant:

The applicant has indicated that peat is not a fossil fuel as defined in the BACT determination of July 13, 1981. The applicant argues that peat is not a fossil fuel as defined in the Florida Administrative Code, Section 17-2.02(54) or EPA New Source Performance Standards, Section 60.41(b).

Applicant contends that peat is not a fossil fuel and therefore no State or Federal emission limitations exist for boilers burning peat as fuel. The applicant recommends a particulate emission limit of 0.2 pounds per million Btu heat input instead of the 0.1 limit determined as BACT.

Original BACT Determination by DER:

The Department determined peat to be a solid fossil fuel based on the fact peat is a precursor of coal as described in the Chemical Engineers Handbook, fifth edition. Authors P.D. Moore and D.J. Bellamy in their publication "Peatlands" describe peat as the fossilized excess of thousands of years of photo-synthesis and this storage of a reserve of energy by mire eco-systems is of considerable importance since such "fossil" energy can be tapped by man and released in combustion.

The particulate emission limit of 0.1 pounds per million Btu heat input originally determined as BACT is equal to the New Source Performance Standard (NSPS) for fossil-fuel-fired steam generators, Subpart D, Subsection 60.42(1).

Amended BACT Determination by DER:

The first paragraph under the subsection "justification of DER determination" of the BACT determination issued July 13, 1981 is to be deleted and replaced by the following paragraph:

"The applicant plans to fire peat and/or bark as the fuel in the prototype steam generator No. 5. Peat and lignite form a transition layer between biomasses and coals (Tappi-August 1981), therefore peat, being neither a fossil-fuel nor a carbonaceous fuel as defined in 17-2. F.A.C., is presently considered an unclassified fuel. Bark, however, is defined as "wood residue" in NSPS, Subpart D, subsection 60.41(e), and as a "carbonaceous fuel" in 17-2.02(21) F.A.C.

Justification of Determination Amendment:

The Department agrees with the applicant's request not to define peat as a fossil fuel. Establishing a definition is a rule making process and beyond the scope of a BACT determination. Peat, for this determination, will be considered an alternate energy source.

Peat has found use as fuel in the USSR, Ireland, and Finland but was only recently considered an alternative boiler fuel by United States industry. The technology to fire peat is not unknown and the Department believes that the manufacturers of emission control devices now have the expertise to build equipment for the level of particulate control required for this installation.

The Department reaffirms that the particulate emission limit, for steam generator No. 5, of 0.1 pound per million Btu heat input is BACT as per the determination of July 13, 1981.

In making this determination, the Department recognizes that peat mire ecosystems vary in composition. There is not sufficient information at this time to indicate the particulate emission limit determined as BACT is not achievable. If information becomes available, and the Department determines the particulate emission limit is not achievable, the BACT determination will be reviewed and the appropriate changes made.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended By:

C A Smallwood

Steve Smallwood, Chief, BAQM

Date:

9/24/81

Approved:

T Cole

Victoria Tschinkel, Secretary

Date:

Sept. 25, 1981

SS:caa

ATTACHMENTS B

Rec'd 9/2/81 gdh

Georgia-Pacific Corporation

Hudson Pulp & Paper Corp.
A wholly-owned subsidiary

P.O. Box 919
Palatka, Florida 32077
Telephone (904) 325-2001

Bill

August 25, 1981

Mr. Clair Fancy
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

In response to the Department's concern about odor control for new miscellaneous sources such as new digesters, evaporator vents, and brown stock washer vents associated with the Mill's expansion, I would like to assure you that G-P will comply fully with the New Source Performance Standards wherever they apply.

Current plans, though preliminary, are to incinerate the odoriferous gases in the lime kiln which will result in the complete control of the odor from these sources.

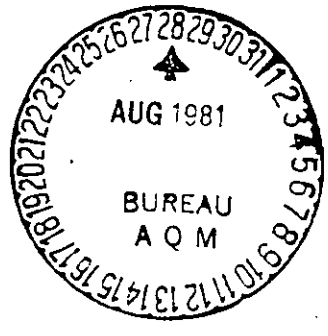
If I can be of further service, please let me know.

Sincerely,

Vernon L. Adams
Supervisor of
Environmental Affairs

mg

cc Mr. R. C. Sherwood
Mr. D. A. Buff



ESE ENVIRONMENTAL SCIENCE AND ENGINEERING, INC.

July 31, 1981
ESE No. 81-128-100

Mr. Steve Smallwood, P.E.
Chief, Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Subject: Permit Applications AC54-43773, AC54-43791, and AC54-43795

Dear Mr. Smallwood:

ESE, on behalf of Georgia Pacific Corporation, has reviewed your comments concerning the above referenced applications as contained in your letter of July 2, 1981. Presented below are the responses to these comments.

SO_2 Short-Term Analysis

*Table 4-2 was found to be incorrect in regards to SO_2 emissions for Lime Kilns #1, #2, and #3 and Power Boiler #4. The correct values are as shown in the computer model printouts. A revised Table 4-2 is included for your convenience.

*Your comments concerning the five-year SO_2 ISCST runs are correct. This source group (all projected sources) has been rerun with the five-year ISCST, and all ISCST refinements with this source group have also been rerun. These runs resulted in slightly higher projected SO_2 impacts, and as a result revised sections 6.0 and 7.1 of the PSD report are included for your review. Other sections of the PSD report are not affected by these changes in projected SO_2 air quality. As you will note, there is now slightly positive SO_2 increment consumption predicted for the proposed modification. Supportive computer model printouts are attached.

TSP Short-Term Analysis

*Your comment is correct concerning the five year TSP ISCST run. However, source group #3 contained only the proposed new G-P sources. The impacts from these sources were not used directly in the analysis, and actually were not even referred to in the report. Since this source group does not have any bearing on the results or conclusions of the PSD report, it is not considered necessary to rerun the model for this source group.

Long-Term Analysis

*Per your request, a key to the modeled sources is provided for both the SO_2 and TSP ISCLT model runs.

Additional information has also been provided in Sections 6.1 and 6.2 demonstrating compliance with AAQS and PSD increments in the vicinity of Seminole Electric and FPL with the proposed sources in operation. This information should satisfy any concerns the Department may have had on this aspect of the project.

We hope this information facilitates your review of the application, but if you have any further questions, please call.

Sincerely,

David A. Buff

David A. Buff, P.E.
Senior Engineer
Project Operations

DAB/sn

cc: Vernon Adams

Table 4-1. Short-Term Modeling Case Runs and Meteorological Periods

Scenario	Day
SO_2	
Maximum 24-Hour	280, 1970
Interaction with Seminole Electric	109, 1974 116, 1974 279, 1974
Interaction with FP&L Plants	280, 1970
Maximum 3-Hour	180, 4/1971
Interaction with Seminole Electric	109, 4/1974
Interaction with FP&L Plants	171, 6/1974
TSP	
Maximum 24-Hour	222, 1971 137, 1973 281, 1970
Interaction with Seminole Electric	7, 1973
Interaction with FP&L Plants	143, 1971

and various modeling reports were considered in developing the inventory, and the maximum emission rates contained therein were used.

4.4 AIR QUALITY IMPACT DETERMINATION

The ISCLT model was used to estimate annual average ground-level concentrations for TSP and SO_2. For these pollutants, modeling was performed for permitted sources within a 50-km radius, including the G-P sources. For annual nitrogen oxides (NO_x), reference is made to the March 1981 POS for which NO_x modeling was conducted. These modeling results showed that the proposed action will pose no threat to the AAQS. All annual printouts are included in Appendix B of this report.

Evaluation of short-term maximum impacts (highest, second-highest) for TSP and SO_2 for the G-P proposed conditions was made using the ISCST. The appropriate highest, second-highest concentrations were determined in 5-year ISCST executions with the following short-term interacting sources included with the G-P sources in the source input data:

1. Seminole Electric (7.5 km and 39 degrees from G-P),
2. FPL Putnam (10.9 km and 120 degrees from G-P), and
3. FPL Palatka (10.6 km and 123 degrees from G-P).

The results of the 5-year ISCST modeling were refined using the ISCST model to determine the maximum impacts and impacts in the interacting directions. The modeled sources and emissions are shown in Table 4-2.

4.5 INCREMENT CONSUMPTION DETERMINATION

The maximum short-term PSD increment consumption was determined by subtracting receptors point-by-point in 5-year ISCST baseline executions from 5-year ISCST projected impacts. Seminole Electric is the only new source in the G-P impact area and currently is under construction. FPL Palatka consumes TSP increments by virtue of a variance to emit particulate up to 0.3 $lb/10^6$ Btu, increased from 0.1 $lb/10^6$ Btu. FPL Putnam

Table 4-2. Modeled Sources and Emissions for G-P Proposed Modification

Source	Baseline Emissions Annual (TPY) TSP	SO_2	Short-Term (lb/hr) TSP	SO_2	Projected Emissions (lb/hr) TSP	SO_2
Recovery Boiler #1	345	216	78.8	49.3	—	—
Recovery Boiler #2	441	309	100.7	70.5	—	—
Recovery Boiler #3	477	298	109.0	68.1	—	—
Recovery Boiler #4	729	1,215	166.5	277.5	166.5	277.5
Proposed Recovery Boiler #5	—	—	—	—	75.4	250.0
Smelt #1	11	4	2.4	1.0	—	—
Smelt #2	16	6	3.6	1.4	—	—
Smelt #3	14	6	3.3	1.4	—	—
Smelt #4	193	25	40.8	5.6	40.8	5.6
Proposed Smelt	—	—	—	—	15.0	5.2
Lime Kiln #1	793	8	180.0	1.9	—	—
Lime Kiln #2	415	8	95.0	1.9	—	—
Lime Kiln #3	407	17	93.0	3.8	—	—
Lime Kiln #4	54.6	48.6	31.6	11.1	31.6	11.1
Proposed Lime Kiln #5	—	—	—	—	29.3	10.5
Power Boiler #4	105	1,192	106.3	358.9	106.3	358.9
Power Boiler #5	186	4,658	46.4	1,279.0	46.4	1,279.0
Combination Boiler #4	2,561	1,008	711.8	962.5	117.0	962.5
Proposed Combination Boiler #5	—	—	—	—	216.7	654.0
FPL Palatka	468	12,888	107.0	2,942.5	321.0	2,942.5
FPL Putnam	1,206	6,723	275.4	1,535.0	275.4	3,070.0
Seminole	—	—	—	—	324.6	12,984.1

Sources: ESE, 1981. G-P, 1981.

6.0 IMPACT ANALYSIS RESULTS

6.1 AIR QUALITY STANDARDS

6.1.1 Particulate Matter

The highest, second-highest predicted 24-hour ground-level concentration for the projected conditions considering the proposed action at G-P is 107.5 ug/m^3, including an assumed background concentration of 80 ug/m^3. This predicted maximum impact (highest, second-highest) is 72 percent of the AAQS for TSP. Predicted maximum interaction impacts are 101, 105, and 102 ug/m^3 (including background). These interactions are 67, 70, and 68 percent of the AAQS for TSP and result from operations at Seminole Electric, FPL Palatka, and FPL Putnam, respectively.

The maximum predicted annual TSP impact for the projected conditions, including all interacting sources, is 44 ug/m^3 and is 73 percent of the annual AAQS for TSP. This value includes the assumed background of 40 ug/m^3. All modeling results are shown in Table 6-1 along with the applicable AAQS for visual comparison.

In order to demonstrate that AAQS will not be violated in the vicinity of Seminole Electric or FPL Palatka/Putnam due to operation of the proposed sources, two air quality impact reports were reviewed: "Seminole Electric PSD Application," Section 9.0, Modeling Analysis Results; and "Analysis of the Air Quality Impact Resulting From a Particulate Emission Rule Change for Fossil-Fuel Steam Generators in Florida," ESE, Inc., May 1979.

In the first referenced report, maximum TSP impacts in the vicinity of Seminole, Georgia-Pacific, and FPL were 3 ug/m^3, annual average, and occurred 10 km almost due north of Seminole. If the maximum annual average TSP impact in the vicinity of Georgia-Pacific due to these sources, i.e., 4 ug/m^3, is added to this (i.e., maximum added to maximum), 7 ug/m^3 is the result. Adding the TSP background of 40 ug/m^3 results in a total of 47 ug/m^3, well below the annual standard of 60 ug/m^3.

Table 6-1. Proposed G-P Mill Modification: Maximum Annual and Highest, Second-Highest Short-Term Predicted Concentrations*

Scenario	Concentration (ug/m^3)				
	3-Hour SO_2	24-Hour SO_2	24-Hour TSP	Annual SO_2	Annual TSP
Maximum Predicted	410	116	108	22	44
Interaction with Seminole Electric	346	71	101	--	--
Interaction with FPL Putnam	355	116	105	--	--
Interaction with FPL Palatka	355	116	102	--	--
State of Florida Standard	1,300	260	150	60	60

* Concentrations include a TSP background of 80 ug/m^3 (24-hour) and 40 ug/m^3 (annual).

Source: ESE, 1981.

For the 24-hour averaging time, the Seminole PSD predicted a highest, second-highest point source impact of 5 ug/m^3, which occurred in the vicinity of FPL. This value, however, does not reflect FPL Palatka's variance from 0.1 lb/mm Btu to 0.3 lb/mm Btu for particulate emssions. In the second referenced report above, FPL Palatka was predicted to have a maximum increase of 8 ug/m^3 24-hour impact due to the variance emission rate of 0.3 lb/mm Btu (Table 5.3 of said report). Adding both of these predicted maximums to the highest, second-highest predicted impact in the vicinity of G-P, 28 ug/m^3 (excluding background; see Table 6-1), and adding the background, 80 ug/m^3, results in a total 24-hour concentration of 121 ug/m^3. This value is still well below the AAQS of 150 ug/m^3. This analysis, which is extremely conservative in nature, serves to adequately demonstrate without additional modeling that the TSP AAQS will not be violated in the vicinity of Seminole and FPL.

6.1.2 Sulfur Dioxide

The highest, second-highest 3- and 24-hour concentrations predicted for the proposed conditions are 410 and 116 ug/m^3, respectively. Predicted highest, second-highest concentrations due to interaction with Seminole Electric, FPL Putnam, and FPL Palatka are 346, 355, and 355 ug/m^3, respectively, for the 3-hour averaging time, and 71, 116, and 116 ug/m^3, respectively, fo the 24-hour averaging time (see Table 6-1). The maximum predicted annual SO_2 impact as a result of the proposed and including interacting sources is 22 ug/m^3, or 37 percent of the annual SO_2 standard.

In order to demonstrate that SO_2 AAQS will not be violated in the vicinity of Seminole Electric or FPL Palatka/Putnam due to operation of the proposed sources, three air quality impact reports were reviewed: "Seminole Electric PSD Application," Section 9.0, Modeling Analysis Results; "Analysis of the Air Quality Impact Resulting from Burning Higher Sulfur Fuels," prepared for Florida Power & Light Company by ESE, Inc., March 1979; and "Study of the Impact on Air Quality as a Result of Stack Height Changes at FP&L Putnam Facilities," ESE, Inc., January 1980.

In the first referenced report, a maximum annual SO_2 concentration due to Seminole, G-P, and FPL was reported as 28 ug/m^3, occurring 6 km almost due south of Seminole. If this value is added directly to the maximum annual average predicted in the vicinity of G-P, 22 ug/m^3, the result is 50 ug/m^3, which is still below the AAQS of 60 ug/m^3. This is an extremely conservative methodology and result.

In the Seminole PSD application, the highest, second-highest reported SO_2 impacts were 60 ug/m^3, 24-hour, and 514 ug/m^3, 3-hour concentration. Both of these maximums occurred in the immediate vicinity of Seminole Electric. If this maximum is added directly to the highest, second-highest predicted concentrations in the vicinity of G-P (see Table 6-1), the resulting concentrations are 176 ug/m^3, 24-hour average, and 924 ug/m^3, 3-hour average. These levels are well below the SO_2 AAQS.

Review of the other referenced reports revealed that compliance with AAQS in the vicinity of FPL Palatka/Putnam could not be adequately demonstrated by the above conservative approach. Therefore, an additional 5-year ISCST model was executed with all projected sources included and receptors placed downwind of FPL in the direction which aligns FPL and G-P, 120° from north. The resulting highest, second-highest impacts were 87 ug/m^3, 24-hour average, and 310 ug/m^3, 3-hour average. These levels are below the AAQS and demonstrate that G-P will not cause or contribute to any violations in the vicinity of FPL.

6.1.3 Nitrogen Oxides and Carbon Monoxide

Preliminary modeling conducted for the POS showed small impacts for NO_x and CO; therefore, no additional modeling was conducted.

6.2 INCREMENT CONSUMPTION

The short-term increment consumption analysis is the same for the federal review as for DER; however, because EPA uses actual baseline emissions instead of allowable, the annual analysis predicted slightly different consumptions for the proposed action. The predicted short-term TSP

increment consumption under both EPA and DER regulations is negative (i.e., an air quality improvement at all locations compared to the baseline concentrations). Maximum increment consumption for SO_2 in the vicinity of G-P, based upon receptor-by-receptor subtraction of the 5-year ISCST baseline and projected results, is predicted to be 99 ug/m^3, 3-hour average, and 15 ug/m^3, 24-hour average. Because these maximum increment consumption levels are low compared to the allowable PSD increments, refined increment consumption model runs were not performed.

To demonstrate that PSD increments for SO_2 will not be exceeded in the vicinity of Seminole Electric, the reports referenced in Section 6.1 were again reviewed. In the Seminole PSD application, Seminole was the only increment consuming source, and it consumed a maximum of 5 ug/m^3, annual average SO_2, 60 ug/m^3, 24-hour average, and 437 ug/m^3, 3-hour average. The maximum predicted increment consumption in the vicinity of G-P and in the direction towards Seminole Electric (see computer model printouts) is 6 ug/m^3, annual average, 7 ug/m^3, 24-hour average, and 24 ug/m^3, 3-hour average. If these are added directly to the Seminole maximums, which is an extremely conservative methodology, the resulting concentrations are 11 ug/m^3, annual average, 67 ug/m^3, 24-hour average, and 461 ug/m^3, 3-hour average. These values are all below the allowable Class II PSD increments.

To demonstrate that PSD increments for SO_2 will not be violated in the vicinity of FPL Palatka/Putnam, an additional 5-year ISCST with both baseline and projected sources was executed, with receptors placed downwind of FPL along the direction which aligns G-P and FPL. The results of this analysis showed maximum 24-hour increment consumption of 22 ug/m^3 and maximum 3-hour increment consumption of 86 ug/m^3, both below allowable Class II increments.

Annual TSP increment consumption under both DER and EPA regulations was negative at all receptor locations, indicating an improvement in TSP air quality compared to the baseline concentrations. Annual SO_2 increment

consumption based on DER regulations was less than 5 ug/m^3, and annual SO_2 increment consumption was less than 6 ug/m^3. Results of the increment consumption analysis are presented in Table 6-2 along with allowable Class II increments for comparison purposes.

6.3 CLASS I IMPACTS

Because of the distance to the nearest Class I area (Okefenokee Swamp, 120 km northwest), impacts on the Class I area were not addressed quantitatively. However, increment modeling in the vicinity of G-P showed a substantial decrease in TSP levels since the baseline.

6.4 DOWNWASH

In comparing the 24-hour highest, second-highest TSP refinement execution requesting the G-P proposed sources only with and without downwash, it was found that with the consideration of downwash effects, the maximum increase was only 1 ug/m^3 above no downwash considerations. For the 24-hour SO_2 refinement, the maximum increase was 5 ug/m^3 above the no-downwash case (24-hour averages).

In comparing four selected hours of meteorological data conducive to downwash effects, the maximum 1-hour increase due to downwash was 27 ug/m^3 for TSP and 50 ug/m for SO_2. Using the EPA method given in the guidelines document, Volume 10, a factor of 0.6 (maximum) was used to correct for a 24-hour average. The increases were then predicted to be 16 ug/m^3 and 30 ug/m^3, respectively. If these increases were applied to the worst-case modeling results (see Sections 6.1.1 and 6.1.2), the resulting concentrations would remain below AAQS (123.5 ug/m^3 for 24-hour TSP and 127.6 for 24-hour SO_2), indicating that the stacks proposed at heights less than GEP will not pose a threat to AAQS.

Table 6-2. Summary of PSD Increment Consumption Results: Proposed G-P Modification

Pollutant	Increment Consumption (ug/m^3)					
	EPA			DER		
	3-Hour	24-Hour	Annual	3-Hour	24-Hour	Annual
Sulfur Dioxide						
Maximum Increment Consumption	99	15	<6	99	15	<5
Allowable Increment	512	91	20	512	91	20
Particulate						
Maximum Increment Consumption	--	<0	<0	--	<0	<0
Allowable Increment	--	37	19	--	37	19

Source: ESE, 1981.

7.0 ADDITIONAL IMPACTS ON SOILS, VEGETATION, AND VISIBILITY

7.1 IMPACTS ON SOILS AND VEGETATION

Impacts on soils and vegetation due to operation of the proposed sources are expected to be minor. The projected highest, second-highest 3-hour SO_2 concentration of 410 ug/m^3 and annual mean concentration of 22 ug/m^3 (see Table 6-1) are well below levels generally reported for damage to sensitive plant species. As an example of such damage levels, European studies have found one-half hour levels of 3,406 ug/m^3 and long-term means of 393 ug/m^3 to approximate threshold levels for several species (Heck and Brandt, 1977). Other long-term studies have indicated threshold ranges for sensitive species of 47 ug/m^3 to 78 ug/m^3 over two to four months of exposure and 31 ug/m^3 over seven months (Florida Sulfur Oxides Study, Inc., 1978).

Alfalfa, which is commonly thought to be one of the most SO_2-sensitive species, has a 2-hour threshold level of at least 2,620 ug/m^2 and an 8-hour threshold of 655 ug/m^2 (Heck and Brandt, 1977), far above the predicted impact levels. Based upon results such as these, no discernable impacts are predicted from this the proposed modification.

Particulate matter is generally considered to have a relatively unimportant effect on vegetation (Jacobson & Hill, 1970). A net air quality improvement is predicted over the baseline conditions (see Section 6); as such, no adverse effect on soils and vegetation due to particulate emissions is expected.

Plant species classified as "sensitive" to NO_2, such as pinto bean, cucumber, lettuce, and tomato, displayed injury when exposed to NO_2 levels of 3,760 to 4,960 ug/m^3 for a 2-hour period. Extremely resistant species, such as heath, were unaffected by an exposure of 1,900,000 ug/m^3 for 1 hour. Blue grass, orange tree plants, and rye are all classified as "intermediate" in resistance to NO_2 injury.

TSP ISCLT - Key to Sources Modeled

Source No.	Source Description
1	P.B.#4 Projected, DER, EPA Baseline
2	Combo Boiler #4, Projected
3	P.B.#5 Projected, DER, EPA Baseline
4	R.B.#4 Projected, DER, EPA Baseline
5	Smelt #4 Projected, DER, EPA Baseline
6	L.K.#4 Projected, DER, EPA Baseline
7	Proposed Lime Kiln #5
8	Proposed R.B. #5
9	Proposed Smelt Tanks #5
10	Proposed Combo Boiler #5
11	FPL Palatka - DER, EPA Baseline
12	Seminole
13	FPL Putnam - Projected
14	R.B.#1, DER, EPA Baseline
15	R.B.#2, DER, EPA Baseline
16	R.B.#3, DER, EPA Baseline
17	Smelt #1, DER, EPA Baseline
18	Smelt #2, DER, EPA Baseline
19	Smelt #3, DER, EPA Baseline
20	Lime Kiln #1, DER, EPA Baseline
21	Lime Kiln #2, DER, EPA Baseline
22	Lime Kiln #3, DER, EPA Baseline
23	Combo Boiler #4, DER, EPA Baseline
24	*FPL Putnam Baseline
25	Feldspar Corporation
26	Feldspar Corporation
27	Feldspar Corporation
28	National Protein
29	Florida Solite Corporation
30	Florida Solite Corporation
31	Johns Manville Prod. Corporation
32	E.I. Dupont
33	E.I. Dupont

* Note: Stack height should have been 17.67 m. This difference is insignificant, however, and actually would result in a higher baseline concentration and therefore lower increment consumption.

SO_2 ISCLT - Key to Sources Modeled

Source No.	Source Description
1	P.B.#4 - Projected, EPA, DER Baseline
2	Combo Boiler #4 - Projected, EPA, DER Baseline
3	P.B.#5 - Projected, EPA, DER Baseline
4	R.B.#4 - Projected, EPA, DER Baseline
5	Smelt #4 - Projected, EPA, DER Baseline
6	L.K. #4 - Projected EPA, DER Baseline
7	Proposed Lime Kiln #5
8	Proposed R.B. #5
9	Proposed Smelt Tanks #5
10	Proposed Combo Boilers #5
11	FPL Palatka - Projected, DER, EPA Baseline
12	Seminole
13	FPL Putnam - Projected
14	R.B.#1 - DER, EPA Baseline
15	R.B.#2 - DER, EPA Baseline
16	R.B.#3 - DER, EPA Baseline
17	Smelt #1 - DER, EPA Baseline
18	Smelt #2 - DER, EPA Baseline
19	Smelt #3 - DER, EPA Baseline
20	Lime Kiln #1 - DER, EPA Baseline
21	Lime Kiln #2 - DER, EPA Baseline
22	Lime Kiln #3 - DER, EPA Baseline
23	Combo Boiler #4 - Baseline
24	FPL Putnam - Baseline

Georgia-Pacific Corporation

Hudson Pulp & Paper Corp.
A wholly-owned subsidiary

P.O. Box 919
Palatka, Florida 32077
Telephone (904) 325-2001

June 30, 1981

Mr. Bruce Mitchell
Florida Department of
Environmental Regulation
Bureau of Air Quality
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Mitchell:

Pursuant to our conversation of June 30, 1981, please change the operating time in the permit applications AC54-43773, AC54-43791, and AC54-43795 to read 52 weeks/year.

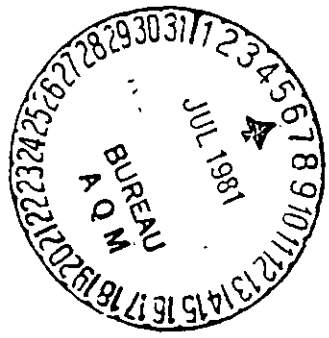
If I can be of further service, please contact me.

Sincerely,

Vernon L. Adams
Supervisor of
Environmental Affairs

mg

cc D. A. Buff, ESE, Gainesville
R. C. Sherwood



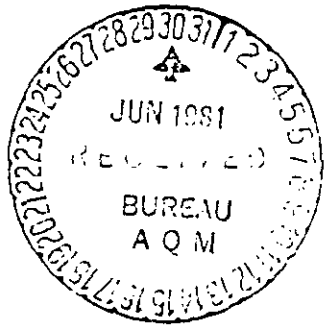
Georgia-Pacific Corporation

Hudson Pulp & Paper Corp.
A wholly-owned subsidiary

P.O. Box 919
Palatka, Florida 32077
Telephone (904) 325-2001

June 26, 1981

John



Mr. Clair Fancy
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

In response to the Department's concern about odor control for new miscellaneous sources associated with the mill's expansion, I would like to assure you that G-P will comply fully with the New Source Performance Standards wherever they apply.

Current plans, though preliminary, are to incinerate the odoriferous gases in the lime kiln.

If I can be of further service, please let me know.

Sincerely,

Vernon L. Adams
Supervisor of
Environmental Affairs

mg

cc Mr. R. C. Sherwood
Mr. D. A. Buff

PERMIT CONDITIONS

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR
Victoria J. Tschinkel
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: Georgia-Pacific Corporation
P. O. Box 919
Palatka, Florida 32077

PERMIT/CERTIFICATION NO. AC 54-43773

COUNTY: Putnam

PROJECT: Kraft Pulp Mill Expansion: Combination Boiler No. 5 (fired with bark and/or peat).

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a combination boiler to produce a maximum of 700,000 lbs./hr. of steam, fired with bark and/or peat, equipped with an electrostatic precipitator, and will use No. 6 Fuel Oil, (maximum 2.5% Sulfur content, not to exceed 40 barrels/hr. - maximum 250×10^6 Btu/hr. heat input), as an auxiliary fuel for startup, shutdown, and emergency only. Permitted hours of operation will be 8760 hours.

Construction shall be in accordance with the permit application and application amendments, documents, and drawings except as otherwise noted on pages 3 and 4, "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.22 (16).
2. BACT determination (see Attachment A).
3. Georgia-Pacific Corporation's letter of June 30, 1981 (change of operating hours, see Attachments B).
4. Stack sampling drawing.

PERMIT NO.: AC 54-43773
APPLICANT: Georgia-Pacific Corporation

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee; its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

[X] Determination of Best Available Control Technology (BACT)
[X] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 54-43773
APPLICANT: Georgia-Pacific Corporation

SPECIFIC CONDITIONS:

1. Construction shall reasonably conform to the plans and schedule given in the application and application amendments. The applicant shall report any delays in construction and completion of the project covered by this permit to the Department.

2. Reasonable precautions shall be taken by the applicant to prevent fugitive particulate emissions during construction and operation of the source.

3. Operation time will be 8760 hours per year.

4. Maximum steam generation will be 700,000 pounds per hour at 350°F.

5. Maximum bark consumption will be 254,965 pounds per hour with a maximum heat input of 1083.6×10^6 Btu per hour.

6. Maximum peat consumption will be 217,869 pounds per hour with a maximum heat input of 1005.9×10^6 Btu per hour.

7. No. 6 Fuel Oil is to be fired only as an auxiliary fuel for startup, shutdown, and emergency. Maximum sulfur content is 2.5%. Maximum consumption will be 40 barrels per hour with a maximum heat input of 250×10^6 Btu per hour.

8. Maximum allowable emissions are:

Pollutant	Emission Limitation	Maximum Allowable Emissions (lbs./hr.)	
		Bark	Peat
Particulate Matter	0.10 lbs./10^6 Btu heat input	108.36	100.59
SO_2	0.65 lbs./10^6 Btu heat input	704.34	653.84
NO_x	0.30 lbs./10^6 Btu heat input	325.08	301.77
VE	20% maximum Opacity (except for one 6-minute period per hour of not more than 27% Opacity).		

PERMIT NO.: AC 54-43773
APPLICANT: Georgia-Pacific Corporation

Specific Conditions (Cont'd)

9. To assure compliance of the emission limits imposed through BACT the applicant shall install, calibrate, maintain and operate a continuous monitoring system for measuring the opacity of emissions. Testing for particulate matter will be EPA reference methods 1, 2, 3, 5 and 9 as in 40 CFR 60, Appendix A, or other state approved methods. Minimum sampling time and volume will be specified in NSPS for this type of source and/or 17-2.23, FAC. Stack sampling facilities will include the eyebolts and angle described in the attached figure.

10. Before the construction permit expires, the proposed boiler will be sampled for pollutant emissions as described in "Specific Condition No. 9".

11. The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit to St. Johns River Subdistrict Office prior to 90 days before the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until the expiration date or until issuance of an operating permit.

12. Upon obtaining an operating permit, the applicant will be required to submit annual reports on the actual operation and emissions of the source. The report will include emission test data, emission test results, fuel consumption and composition, and amount of steam produced.

Expiration Date: December, 1983

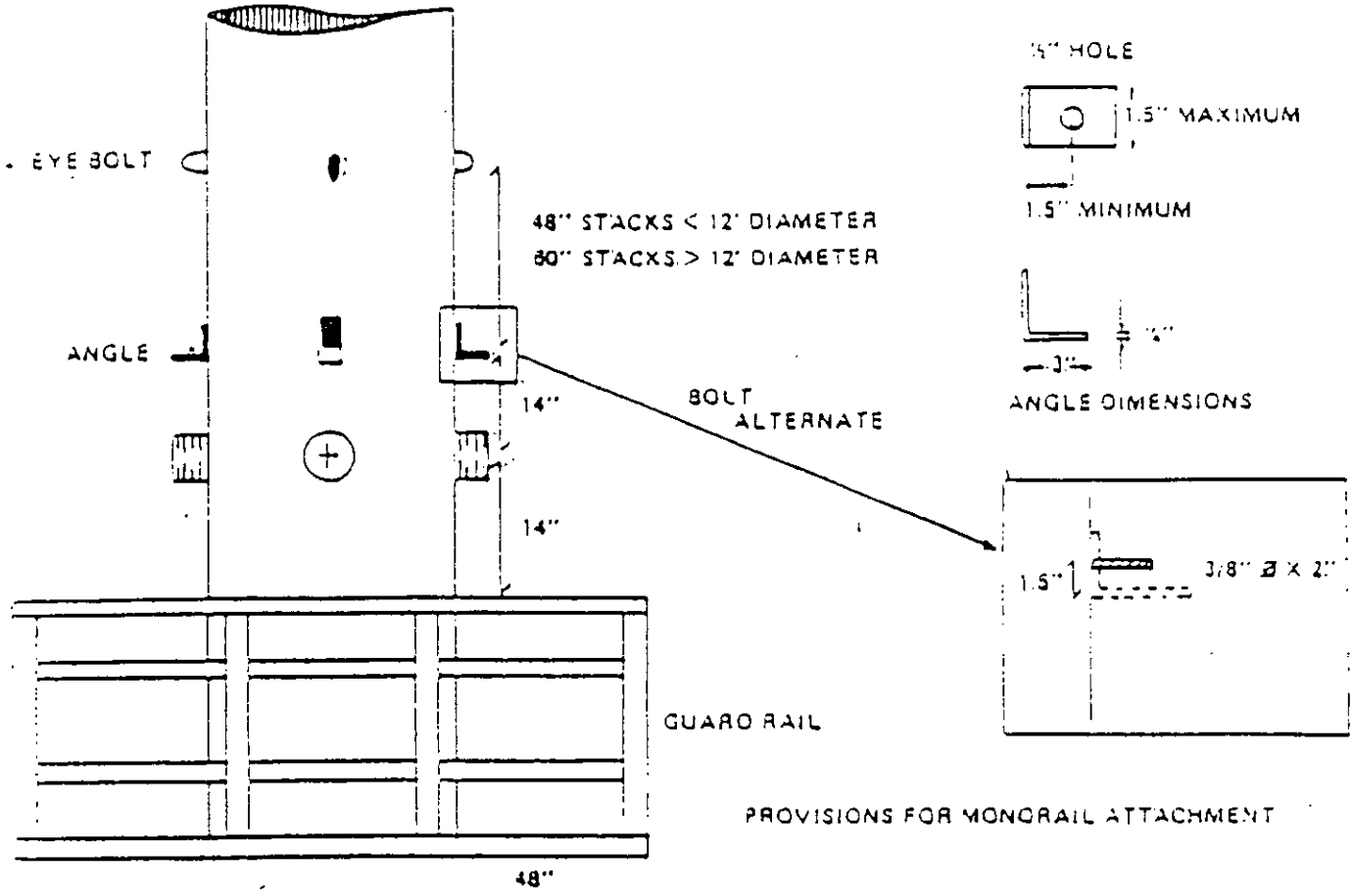
Issued this _____ day of _____, 19_____.

_____ Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

AN EYEBOLT AND ANGLE SHALL BE ATTACHED DIRECTLY ABOVE EACH PORT OF VERTICAL STACKS AND ABOVE EACH VERTICAL SET OF PORTS FOUND ON THE SIDES OF HORIZONTAL DUCTWORK 1.8 WORKING PLATFORMS. THE DIMENSIONS AND PLACEMENT OF THESE FIXTURES ARE SHOWN IN FIGURE 1-1.



PROVISIONS FOR MONORAIL ATTACHMENT

IF EYEBOLT IS MORE THAN 120 INCHES ABOVE THE PLATFORM A PIECE OF CHAIN SHOULD BE ATTACHED TO IT TO BRING THE POINT OF ATTACHMENT WITHIN SAFE REACH. THE EYEBOLT SHOULD BE CAPABLE OF SUPPORTING A 500 POUND WORKING LOAD.

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR
Victoria J. Tschinkel
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: Georgia-Pacific Corporation
P. O. Box 919
Palatka, Florida 32077

PERMIT/CERTIFICATION NO. AC 54-43791

COUNTY: Putnam

PROJECT: Kraft Pulp Mill Expansion: Recovery Boiler No. 5 and two Smelt Dissolving Tanks No. 5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a recovery boiler to produce a maximum of 607,500 lbs./hr. of steam, equipped with an electrostatic precipitator. In addition, two smelt dissolving tanks will be constructed, equipped with a wet scrubber each. Permitted hours of operation will be 8,760 hours.

Construction shall be in accordance with the permit application and application amendments, documents, and drawings except as otherwise noted on pages 3 and 4, "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.22(16).
2. BACT determination (see Attachment A).
3. Georgia-Pacific Corporation's letter of June 30, 1981 (change of operating hours, see Attachment B).
4. Stack sampling drawing.

PERMIT NO.: AC 54-43791
APPLICANT: Georgia-Pacific Corporation

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

[x] Determination of Best Available Control Technology (BACT)
[x] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 54-43791
APPLICANT: Georgia-Pacific Corporation

SPECIFIC CONDITIONS:

1. Construction shall reasonably conform to the plans and schedule given in the application and application amendments. The applicant shall report any delays in construction and completion of the project covered by this permit to the Department.

2. Reasonable precautions shall be taken by the applicant to prevent fugitive particulate emissions during construction and operation of the sources.

3. Operation time will be 8,760 hours per year.

4. Maximum steam generation will be 607,500 pounds per hour at 393°F. Maximum black liquor, at 65% solids, consumption will be 230,679 pounds per hour with a maximum heat input of 990×10^6 Btu per hour, yielding 63,000 pounds per hour of smelt.

5. Maximum total smelt utilization in the smelt dissolving tanks is 63,000 pounds per hour.

6. No. 6 Fuel Oil is to be fired only as an auxiliary fuel for startup, shutdown, emergency and system checking. Maximum sulfur content is 2.5%. Maximum consumption will be 23.8 barrels per hour with a maximum heat input of 146×10^6 Btu per hour.

7. Maximum allowable emissions are:

Recovery Boiler No. 5:

Pollutant	Emission Limitation	Maximum Allowable Emissions (lbs./hr.)
Particulate Matter	0.044 grains/DSCF corrected to 8% oxygen	75.4
Total Reduced Sulfur (TRS)	5 ppm by volume on a dry basis, corrected to 8% oxygen.	97.96
SO_2	50 ppm	5.2
Visible Emissions	30% maximum Opacity	

PERMIT NO.: AC 54-43791
APPLICANT: Georgia-Pacific

Smelt Dissolving Tanks No. 5:

Pollutant	Emission Limitation	Maximum Allowable Emissions (total) (lbs./hr.)
Particulate Matter	0.2 lbs./ton black liquor solids (dry weight)	15.0
TRS	0.0168 lbs./ton black liquor solids (dry weight)	1.26

8. To assure compliance of the emission limits imposed through BACT and New Source Performance Standards (NSPS), 40 CFR 60, Subpart BB, the applicant shall install, calibrate, maintain, and operate continuous monitoring systems for measuring opacity of emissions and TRS emissions from the recovery boiler.

9. For emissions from the recovery boiler and smelt tanks, compliance test procedures will be EPA reference methods 1, 2, 3, 5, 9 and 16. as in 40 CFR 60, Appendix A, or other state approved methods. Minimum sampling time and volume will be specified in NSPS for this type of source. Stack sampling facilities will include the eyebolt and angle described in the attached figure.

10. Before the construction permit expires, the recovery boiler and two smelt tanks will be sampled for pollutant emissions as described in "Specific Condition No. 9".

11. The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit to St. Johns River Subdistrict Office prior to 90 days before the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until the expiration date or until issuance of an operating permit.

12. Upon obtaining an operating permit, the applicant will be required to submit annual reports on the actual operation and emissions of the source. The report will include emission test data, emission test results, fuel consumption and composition, and amount of steam produced.

Expiration Date: December, 1985

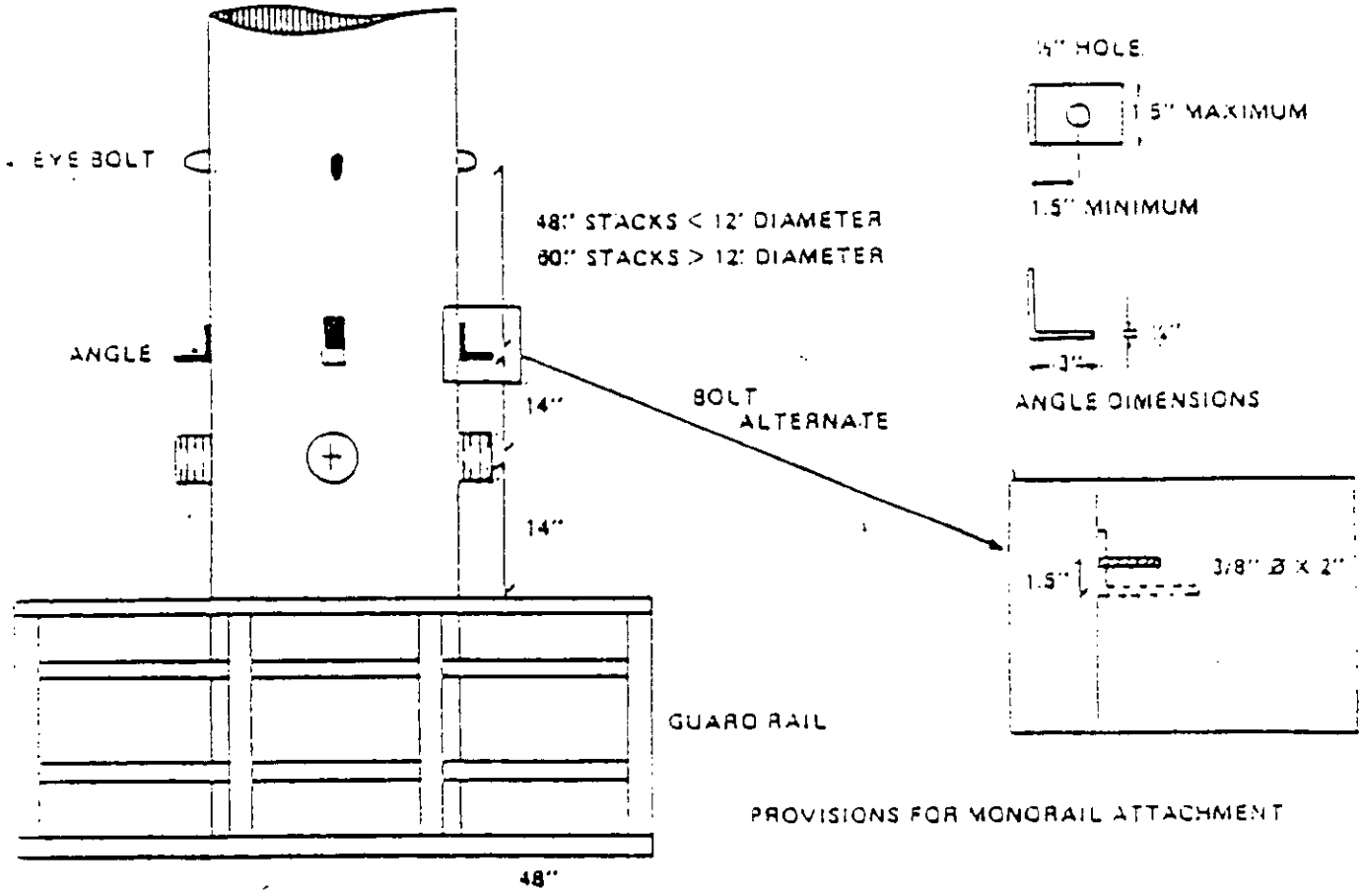
Issued this _____ day of _____, 19____.

_____ Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

AN EYEBOLT AND ANGLE SHALL BE ATTACHED DIRECTLY ABOVE EACH PORT OF VERTICAL STACKS AND ABOVE EACH VERTICAL SET OF PORTS FOUND ON THE SIDES OF HORIZONTAL DUCTWORK 1.8 WORKING PLATFORMS. THE DIMENSIONS AND PLACEMENT OF THESE FIXTURES ARE SHOWN IN FIGURE 1-1.



PROVISIONS FOR MONORAIL ATTACHMENT

IF EYEBOLT IS MORE THAN 120 INCHES ABOVE THE PLATFORM A PIECE OF CHAIN SHOULD BE ATTACHED TO IT TO BRING THE POINT OF ATTACHMENT WITHIN SAFE REACH. THE EYEBOLT SHOULD BE CAPABLE OF SUPPORTING A 500 POUND WORKING LOAD.

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR
Victoria J. Tschinkel
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: Georgia-Pacific Corporation
P. O. Box 919
Palatka, Florida 32077

PERMIT/CERTIFICATION
NO. AC 54-43795

COUNTY: Putnam

PROJECT: Kraft Pulp Mill Expansion: Lime Kiln No. 5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a lime kiln with a maximum capacity of 320 tons per day, equipped with a high energy venturi scrubber. No. 6 Fuel Oil maximum consumption will be 16.6 barrels per hour with a maximum heat input of 102×10^6 Btu per hour. Maximum sulfur content is 2.5%. Permitted hours of operation will be 8,760 hours.

Construction shall be in accordance with the permit application and application amendments, documents, and drawings except as otherwise noted on pages 3 and 4, "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.22(16).
2. BACT determination (see Attachment A).
3. Georgia-Pacific Corporation's letter of June 30, 1981 (change of operating hours, see Attachments B).
4. Stack sampling drawing.

PERMIT NO.: AC 54-43795
APPLICANT: Georgia-Pacific Corporation

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following:information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

[x] Determination of Best Available Control Technology (BACT)
[x] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 54-43795
APPLICANT: Georgia-Pacific Corporation

SPECIFIC CONDITIONS:

1. Construction shall reasonably conform to the plans and schedule given in the application and application amendments. The applicant shall report any delays in construction and completion of the project covered by this permit to the Department.

2. Reasonable precautions shall be taken by the applicant to prevent fugitive particulate emissions during construction and operation of the source.

3. Operation time will be 8760 hours per year.

4. Maximum capacity is 320 tons per day.

5. No. 6 Fuel Oil maximum consumption is 16.6 barrels per hour with a maximum heat input of 102×10^6 Btu per hour. Maximum sulfur content is 2.5%.

6. Maximum allowable emissions are:

Pollutant	Emission Limit	Maximum Allowable Emissions (lbs./hr.)
Particulate Matter	0.13 grains/DSCF (corrected to 10% oxygen)	29.31
TRS	8 ppm. by volume on a dry basis (corrected to 10% oxygen)	1.09
VE	20% maximum Opacity	

7. To assure compliance of the emission limits imposed through BACT and New Source Performance Standards (NSPS), 40 CFR 60, Subpart BB, the applicant shall install, calibrate, maintain and operate a continuous monitoring system for measuring TRS.

8. Testing for emissions will be EPA reference methods 1, 2, 3, 5, 9 and 16 as in 40 CFR 60, Appendix A, or other state approved methods. Minimum sampling time and volume will be specified in NSPS for this type of source. Stack sampling facilities will include eyebolts and angle as described in the attached figure.

9. Before the construction permit expires, the proposed lime kiln will be sampled for pollutant emissions as described in "Specific Condition No. 8".

10. The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit to St. Johns River Subdistrict Office prior to 90 days before the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until the expiration date or until issuance of an operating permit.

11. Upon obtaining an operating permit, the applicant will be required to submit annual reports on the actual operation and emissions of the source. The report will include emission test data, emission test results, fuel consumption and composition, pH and pressure drop.

Expiration Date: December, 1985

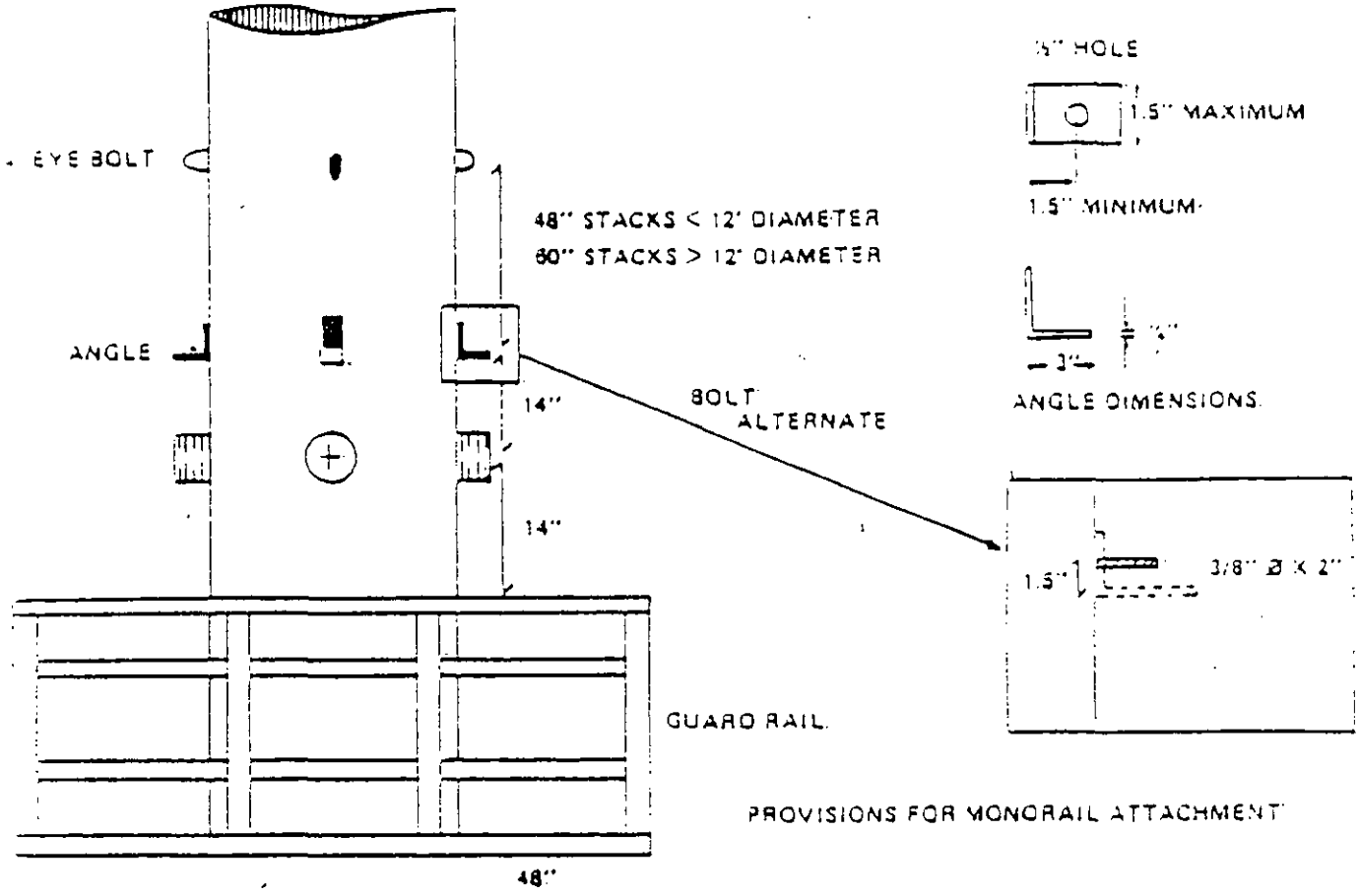
Issued this _____ day of _____, 19____.

_____ Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

AN EYEBOLT AND ANGLE SHALL BE ATTACHED DIRECTLY ABOVE EACH PORT OF VERTICAL STACKS AND ABOVE EACH VERTICAL SET OF PORTS FOUND ON THE SIDES OF HORIZONTAL DUCTWORK 1.8 WORKING PLATFORMS. THE DIMENSIONS AND PLACEMENT OF THESE FIXTURES ARE SHOWN IN FIGURE 1-1.



PROVISIONS FOR MONORAIL ATTACHMENT

IF EYEBOLT IS MORE THAN 120 INCHES ABOVE THE PLATFORM A PIECE OF CHAIN SHOULD BE ATTACHED TO IT TO BRING THE POINT OF ATTACHMENT WITHIN SAFE REACH. THE EYEBOLT SHOULD BE CAPABLE OF SUPPORTING A 500 POUND WORKING LOAD.