Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

September 19, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ronald L. Paul, Executive Vice President
Wood Products and Distribution
Georgia-Pacific Corporation
19th Floor
55 Park Place
Atlanta, GA 30303

Re: Request for Extension of Construction Permit Expiration
Georgia-Pacific Corporation OSB Facility, Hosford, Florida
DEP Permit No. 0770010-001-AC, PSD-FL-282

Dear Mr. Paul:

The Department reviewed your request dated July 22, 2002, to extend the expiration date of the construction permit for the Georgia-Pacific Corporation OSB Facility in Hosford, Florida. Per Rule 62-4.080, F.A.C., an extension for a construction permit shall be granted if the applicant can demonstrate reasonable assurances that upon completion, the extended permit will comply with the standards and conditions required by the applicable regulation.

We already have fairly extensive information about the facility and the control equipment. We understand that economic drivers are primarily responsible for slowing the progress of the facility's construction. To complete the reasonable assurance requirement allowing extension of the permit, please submit the following information:

1. Indicate the date construction began, and list the major construction milestones that have been achieved to date.
2. List the remaining tasks to be performed to complete installation of the facility and provide approximate dates for completing those tasks.
3. Provide a statement (and basis for believing) that upon completion, the facility will comply with the standards and conditions required by applicable regulation.

If you have any questions regarding this matter, please call me at (850)921-9523 or Greg DeAngelo at (850)921-9506.

Sincerely,

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/gpd

cc: Paul Vasquez, Georgia-Pacific
Margaret Vest, Georgia-Pacific
Kevin White, DEP NWD

SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ronald L. Paul
Executive Vice President
Georgia-Pacific Corp./Wood Products & Distribution
55 Park Place, 19th Floor
Atlanta, GA 30303

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City, State, ZIP+4: Atlanta, GA 30303

PS Form 3800, January 2001 See Reverse for Instructions

Gibson, Victoria

From: Gibson, Victoria
Sent: Friday, September 20, 2002 1:43 PM
To: DeAngelo, Gregory
Subject: Updated Addresses for GA-Pacific

Good afternoon.

Mr. Paul Vasquez
Manager of Environmental Engineering
Georgia-Pacific Corp.
55 Park Place, 17th Floor
Atlanta, GA 30374
(404) 652-3564

Ms. Margaret Vest
Field Engineer
Georgia-Pacific Corp.
P. O. Box 65309
Orange Park, FL 32065
(new phone # (904) 298-1116

I will make a copy of this information for you and it will also be dropped into the main files as well as my address list.

Vickie

Victoria Gibson
Administrative Secretary
Bureau of Air Regulation
Division of Air Resources Management
Department of Environmental Regulation
850-921-9504 FAX: 850-922-6979
Email: victoria.gibson@dep.state.fl.us

Georgia-Pacific Corporation
133 Peachtree Street NE (30303-1847)
P.O. Box 105605
Atlanta, Georgia 30348-5605
Telephone (404) 652-4000

January 28, 1999

Mr. Clair Fancy P.E.
Bureau of Air Management
Florida Department of Environmental Protection
2600 Blair Stone Rd
MS -5505
Tallahassee, FL 32399-2400

RECEIVED
JAN 29 1999
BUREAU OF
AIR REGULATION

RE: Air Dispersion Modeling Protocol for Proposed Georgia-Pacific Hosford Facility

Dear Mr. Fancy:

Georgia-Pacific Corporation (G-P) is preparing a Prevention of Significant Deterioration (PSD) air permit application for a proposed Oriented Strandboard (OSB) manufacturing facility. The application will include an air quality analysis. To simplify the Florida Department of Environmental Protection (FDEP) review of the analysis, G-P requests FDEP's approval of this air dispersion modeling protocol. The protocol addresses: modeling methodology, model selection, source inventories, building downwash, receptor locations, meteorological data, and background air quality.

A summary of the modeling protocol is as follows:

Parameter	Proposed Protocol
Model Selection	ISCST3 98356 , VISCREEN 1.1
Source Inventory	All on-site quantifiable point sources plus off-site sources within screening area. The North Carolina Screening Technique will be applied. G-P will request off-site source inventory data once the impact areas for all pollutants are determined.
Building Downwash	All solid buildings will be analyzed with BPIP (95086)
Receptors	Polar grids, spaced at 10-degree increments will be used for screening. Maximum impacts will be refined to 100-meter (m) spacing.
Meteorological Data	Tallahassee/Waycross 1982-1986. Anemometer height of 25 feet.
Ambient Air Quality	Appropriate ambient air quality data will be requested by G-P in a separate letter.

The information needed by G-P to complete the analysis is as follows:

- Background air quality data
- Competing Source inventories for Ambient Air Quality Standards (AAQS) and PSD Class II increments
- PSD Class I increment inventory for St. Marks and Bradwell Bay Wilderness Areas

Project Description

The OSB facility will consist of material handling sources, pressing and drying equipment, appropriate control equipment, and buildings to produce approximately 475 million square feet per year. The project area is located approximately 30 miles west, southwest of Tallahassee. More specifically, the facility will be located in Liberty County, near Hosford. The area is currently undeveloped. The UTM coordinate for the project area is 713.5 E, 3369.5 N kilometers (km), Zone 16.

The proposed project will result in emissions increases above the US Environmental Protection Agency (EPA) PSD significant emission rate levels for several criteria pollutants including:

- ozone (based on the increase in volatile organic compound (VOC) emissions)
- Total suspended particulate matter (TSP)
- particulate matter less than 10 microns in diameter (PM_{10})
- nitrogen oxides (NO_x)
- carbon monoxide (CO).

Further information on individual sources is presented below.

Air Quality Analysis Methodology

General

An analysis will be performed for PSD Class II and PSD Class I areas. A summary of applicable air standards is presented in Table 1 in the Appendix. For PSD Class II areas, the analysis will be performed in two steps: Significant Impact Analysis and Full Analysis. The significant impact analysis will model the project for all pollutants listed above (except ozone). The maximum impact of these pollutants will be compared to two levels:

- EPA significant impact levels (SILs)
- EPA monitoring significance levels

For each pollutant, if the maximum impacts are less than these levels, no further analysis is required. If the maximum impacts are greater than the SILs, then the pollutant will be modeled for compliance with the

Florida Ambient Air Quality Standards (AAQS) and PSD Class II allowable increments. If the maximum impacts are greater than the monitoring significance levels, then permit application will address separate requirements for ambient monitoring.

PM_{10}

The form of the PM_{10} standard was affected by the final rule published in the Federal Register on July 10, 1998. The 24-hour averaging time standard was changed from a sixth highest in five years to a 99th percentile over 3 years. In response to the notice, EPA issued interim guidance on how modeling analyses may demonstrate compliance. A copy of this letter is presented in the Appendix. The analysis will use the H4H 24-hour impacts. The proposed approach is more conservative than the EPA interim guidance. Predicted impacts for the annual averaging time will be computed by using the maximum of five annual average impacts at each location.

PSD Class I

For PSD Class I areas, the analysis will also be performed in two steps: Significant Impact Analysis and Full Analysis. EPA has proposed SILs for the PSD Class I areas for NO_X, and PM_{10}. For the significant impact analysis the maximum impact of will be compared to SILs. For each pollutant, if the maximum impacts are less than these levels, no further analysis is required. Otherwise, the pollutant will be modeled for comparison to the PSD Class I allowable increment.

In summary, the full analysis will compare model impacts to the standards as follows:

Pollutant	**AAQS and will be compared to:**	**PSD Class II Increments will be compared to:**	**PSD Class I Increments will be compared to:**
CO	Highest, Second Highest (HSH) 1-hour and 8-hour	No applicable standard	No applicable standard
NO_2	Annual average	Annual average	Annual average
PM_{10}	Annual average and Highest, Fourth Highest (H4H) for 24-hour	Annual average and HSH for 24-hour	Annual average and HSH for 24-hour

Air-Quality Related Values (AQRVs)

The project area is within 50 km of two PSD Class I areas : Bradwell Bay and St. Marks National Wilderness Areas (NWAs). In accordance with the PSD regulations, an analysis will be made in these areas for plume blight using the VISCREEN Model. **G-P requests that FDEP provide an appropriate background visual range for use in the VISCREEN model.** No other PSD Class I areas are within 200 km of the site.

Model Selection

The Industrial Source Complex Short-term model (ISCST3, Version 98356) will be used to predict air quality impacts at all areas in the vicinity of the project site. All modeling analyses will use the EPA default regulatory options. The land use within a 3-km radius of the Hosford facility is rural. Therefore, the modeling analysis will use the rural option for dispersion coefficients and wind speed profile exponents. Also, the terrain elevations in the vicinity of the site are flat. Therefore, no elevation data will be applied for source and receptor locations. Please see the Appendix for topographic maps of the project area.

Emission Inventories

The analysis will model all G-P point sources and appropriate competing (off-site) sources. Tables 2 and 3 present the emission rates and source parameters for the proposed facility. The data reflects control equipment. The sources are: six pneumatic transfer systems with bagfilters and three regenerative thermal oxidizers (RTOs) controlling the presses and dryers. All sources will operate continuously and simultaneously.

Preliminary modeling has indicated that the project will produce significant impacts for PM_{10} and NO_2 out to distances of 10 and 1 km, respectively. For determining compliance with the AAQS and PSD Class II allowable increments, G-P will develop a competing facility emission inventory that will include areas out to 60 and 1 km from the facility for PM_{10} and NO_x, respectively. **This task requires FDEP data on nearby facilities.**

Competing facilities will be screened for inclusion in the modeling inventory. An analysis with the North Carolina Screening Technique will determine if competing facilities are expected to cause a significant concentration gradient in the vicinity of the Hosford facility. If this is true, the facility will be included in the modeling inventory. A copy of the Screening Technique is presented in the Appendix.

For determining compliance with the PSD Class I allowable increments (if necessary), G-P will develop a PSD increment emission inventory based on the PSD Class I area. **This task also requires FDEP data on increment consuming and expanding facilities near the Class I areas.**

Building Wake Effects

The analysis will also address the potential for building-induced downwash. Dimensions for all significant building structures at the proposed facility will be entered into the EPA's Building Profile Input Program (BPIP, Version 95086). The BPIP program will then be used with stack height data for the proposed sources to determine direction-specific building heights and widths that can be directly included in the ISCST3 modeling analysis.

Receptor Locations

For all analyses, screening and refined polar receptor grids will be used. All screening grids will include 36 radials, spaced at 10-degree increments. Along each radial, a receptor will be located at the fenceline, and at 100 to 500 m increments out to a downwind distance of 5 km. Beyond 5 km, receptors will be placed along each radial at 1 and 2 km increments. The significant impact analysis will determine the greatest distance at which impacts equal to the SILs are expected. For all analyses, refined grids will only be applied if the spacing in the vicinity of screening grid maximum impact is greater than 100 m. Refined grids will be centered on the screening grid maximum impact location and will include radials spaced at 2-degree increments between the adjacent screening grid receptor locations. Distances along each refined grid radial will be 100 m.

The closest PSD Class I area to the site are the Bradwell Bay and St. Marks NWAs. These areas are approximately 35 and 45 km from the project area, respectively. A rectangular array of discrete receptors for these areas was prepared. The receptor locations entirely cover the NWAs spaced 1 km apart from one another. The receptor locations for the PSD Class I areas are tabulated in Table 4.

Meteorological Data

Impacts will be predicted using hourly meteorological data for the five-year period 1982-1986. The meteorological data will be comprised of hourly surface data and upper air data collected at the Tallahassee

Regional Airport and Waycross, Georgia Airport, respectively. These data have been provided to consultants for G-P by FDEP during previous air modeling studies. The anemometer height is 25 feet.

Background Concentrations

Air quality data for use in the Hosford facility analysis will be provided by FDEP. The non-modeled background concentration will represent impacts from sources not explicitly included in the air modeling analysis. These background data will be added to the modeling results for comparison to the AAQS. **This task also requires FDEP data for the selection of appropriate background values.**

Please call me if you have any questions or comments on the protocol. I can be reached at (404) 652-4293 and (404) 652-4706 (FAX). G-P appreciates the cooperation of the FDEP in reviewing this air dispersion modeling protocol for the G-P Hosford facility.

Sincerely yours,

Mark J. Aguilar

Mark J. Aguilar P.E.
Environmental Engineer
Georgia-Pacific Corporation

Enclosures : Appendix with Tables 1-4, topographic maps, EPA correspondence, North Carolina Screening Technique

Cc: Bobby Cooley P.E. , FDEP Pensacola
Paul Vasquez, G-P Atlanta
Tammy Wyles, G-P Atlanta
Margaret Vest P.E. , G-P Palatka

APPENDIX

- March 17, 1998 Interim Guidance from EPA for Air Modeling Compliance Demonstration of the 1997 Revised form of the PM_{10} 24-hour Standard
- North Carolina Screening Technique
- Table 1. Summary of Applicable Air Quality Standards
- Table 2. Summary of Source Parameters
- Table 3. Summary of Emission Rates
- Table 4. PSD Class I Area Receptor Coordinates

MAR 17 1998

MEMORANDUM

SUBJECT: Modeling for Revised PM_{10} Standards

FROM: William F. Hunt, Jr.
Director, Emissions, Monitoring, and Analysis Division (MD-14)

TO: See Addressees

This memorandum provides interim guidance for modeling PM_{10} when the results of the modeling need to be compared to the revised PM_{10} National Ambient Air Quality Standards (NAAQS), which were promulgated in July 1997. Final guidance will take the form of a revision to the Guideline on Air Quality Models.

Modeling for the revised PM_{10} standards poses some potential issues, as the revised standards are explicitly specified as 3-year air quality averages (See 40CFR Part50 Appendix N, 62FR38678), and meteorological data bases for modeling do not generally correspond to this length of record. While the explicit specification of a 3-year average makes it somewhat difficult to define a surrogate modeling procedure which deals precisely with this form of the standard, statistics from modeling simulations based on 1 or 5 years of meteorological data can be viewed as unbiased estimates of specific 3-year periods. Thus, based on a number of meetings and discussions among personnel from the Integrated Strategies Group, the Integrated Implementation Group, the Air Quality Trends Analysis Group, and the Air Quality Modeling Group, the following procedures are recommended when modeling for the revised PM_{10} standards:

1. When 1 year of on-site meteorological data are available for modeling, at each receptor calculate the fourth-high 24-hour estimate as an unbiased estimate of the three-year average 99th percentile value, for comparison with the revised PM_{10} NAAQS. Analogously, at each receptor calculate the annual estimate as an unbiased estimate of the 3-year average annual air quality value. The simulation demonstrates compliance when all the values are at or below the revised PM_{10} NAAQS.

2. When 5 years of representative off-site meteorological data are available for modeling, the entire 5-year period should be used to calculate, at each receptor, the 5-year average of the annual fourth-high 24-hour estimates and the 5-year average of the annual average estimates.

The resulting values would serve as unbiased estimates for the 3-year average 99th percentile and annual concentrations, respectively, for comparison with the NAAQS. As above, to determine whether the entire area is in compliance, the values at the highest receptors are compared to the revised PM_{10} NAAQS.

The primary reasons for these recommendations are:

1. Modeling is data base driven, as opposed to standards driven. Historically, we have placed primary importance in having the most spatially- (most important) and temporally- representative data base as is possible. Then, we have adapted model output to meet the various forms of the standards, within practical limitations. Pursuant to that philosophy is the long- standing requirement for at least 1 year of on-site meteorological data or 5 years of representative off-site meteorological data. As new standards have been promulgated over the years, we have adapted model output to deal with the forms of these standards, while at the same time maintaining the meteorological data base requirement. For example, when the original PM_{10} standards were promulgated we adapted the model output to provide the high-second high, if 1 year of meteorological data were available, or the high-sixth-high, if 5 years of data were used in the modeling. These estimates are considered unbiased estimates of the expected high-second-high concentration. The recommendations above are yet another adaptation of model output to deal with another revised form of the standards, retaining the meteorological data base requirements from the past.

2. As you are aware, there are many circumstances where off-site data are not sufficiently representative to allow for technically defensible model estimates. Yet it is impractical to require the collection of 3 years of on-site meteorological data before modeling can be done for an area or for a new source. Thus, some kind of surrogate modeling procedure is needed that will allow utilization of the 1 year of data. The use of the 1 year of data in modeling to provide an unbiased estimate of the 3-year average of the fourth-high concentration is the best technique apparent to us.

3. It is also impractical, and less than optimum from a technical standpoint, to use only 3 years of representative off site data in the modeling, when 5 years of such data are readily available. Data bases from National Weather Service stations, readily available on the Support Center for Regulatory Air Modeling (SCRAM) Web site or from the National Climatic Data Center, take the form of 5-year data blocks. Since meteorology and air quality are, for practical purposes, independent data bases, it makes the most sense to use as much meteorology as possible in order to make the most robust estimate of the 3-year average.

4. The form of the revised PM_{10} standards includes specifications that they apply at actual atmospheric conditions, as opposed to standard conditions (STP). This is not a concern for modeling as modeling is routinely done at actual conditions.

Implementation of this modeling policy will require a modification to the output of the ISC3 model and perhaps other models. We will begin working on the ISC3 modification as soon as possible. If you have a need to model for the new PM_{10} standards before these model changes are completed, please contact Dennis Doll at the Model Clearinghouse for assistance. Also, as noted above, we recognize that we will need to make some changes to the Guideline on Air Quality Models to formally specify this guidance. This task will be added to other planned Guideline revisions. In the meantime, use this interim policy as your guide when dealing with PM_{10} modeling. If issues come up relative to this policy, please contact Dennis Doll at (919) 541-5693.

Addressees:
Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning and Protection, Region II
Director, Air, Radiation, and Toxics Division, Region III
Director, Air, Pesticides, and Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Multimedia Planning and Permitting Division, Region VI
Director, Air, RCRA, and Toxics Division, Region VII
Assistant Regional Administrator, Office of Pollution
Prevention, State and Tribal Assistance, Region VIII
Director, Air and Toxics Division, Region IX
Director, Office of Air Quality, Region X

cc: Regional Modeling Contact, Regions I-X
K. Blanchard
T. Coulter
D. Doll
R. Dunkins
T. Fitz-Simons
D. Guinnup
J. Paisie
D. deRoeck
M. Wayland

bcc: E. Baldridge
W. Cox
J. Irwin

OAQPS/EMAD/AQMG/DWILSON/bhighsmith:MD-14:X14341:3/9/98
Filename:f/user/bhighsmith/huntmemo

State of North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
S. Thomas Rhodes, Secretary

R. Paul Wilms
Director

July 22, 1985

Mr. Lewis Nagler
Air Management Branch
EPA Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Nagler:

Subject: A Screening Method for PSD

A simple screening procedure which is applicable to PSD has been developed by the North Carolina Air Quality Section. The "Screening Threshold" method is designed to rapidly and objectively eliminate from the emissions inventory those sources which are beyond the PSD impact area yet within the screening area, but are not likely to have significant interaction with the PSD source. Sources which are flagged by this procedure may then be evaluated with conventional screening techniques, or else be included in refined modeling.

Page I-C-18 of the PSD Workshop Manual does state "A simple screening model technique can be used to justify the exclusion of certain emissions...Such exclusions should be justified and documented." The "Screening Threshold" method is documented in the attachment.

We would very much appreciate your comments and ultimate approval. Please feel free to direct any questions or comments to me in writing or by phone at (919) 733-7015.

Sincerely,

Eldewins Haynes

Eldewins Haynes, Meteorologist
Air Permit Unit

Attachment

cc: Mr. Ogden Gerald
Mr. Mike Sewell
Mr. Sammy Amerson
Mr. Jerry Clayton
Mr. Richard Laster
Regional Air Engineers

"Screening Threshold" Method for PSD Modeling
North Carolina Air Quality Section

This method is best suited for situations where a PSD source has several sources outside its impact area, but within its screening area. The object is to find an effective means to minimize the number of such sources in a model, yet to include all sources which are likely to have a significant impact inside the impact area.

As a first-level screening technique, it is suggested to include those sources within the screening area when

$$Q \geq 20D$$

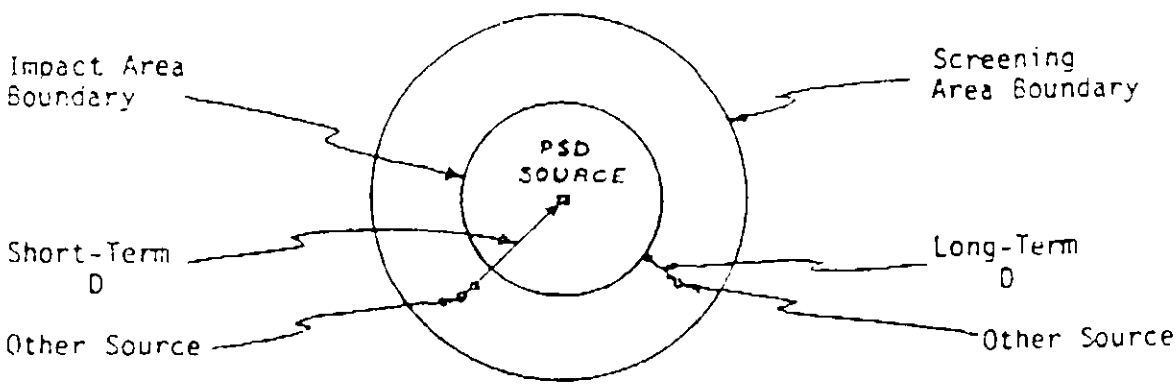
where Q is the maximum emission rate, in tons/year, of the source in the screening area; and D is a distance, in kilometers, from either:

a. the source in the screening area to the nearest edge of the impact area, for long-term analyses

or

b. the source in the screening area to the PSD source defining the impact area, for short-term analyses.

The figure below illustrates the difference between the long-term D and the short-term D.



This method does not preclude the use of alternate screening techniques or of more sophisticated screening techniques given the approval of the review agency. Also, this method does not prevent the review agency from specifying additional sources of interest in the modeling analysis.

The justification for this "Screening Threshold Method" rests upon the following assumptions:

a. effective stack height = 10 meters
b. stability class D (neutral)
c. 2.5 meter/second wind speed
d. mixing height = 300 meters
e. Q = 20D = critical emission rate for a given pollutant
f. one-hour concentrations derived from figure 3-5D in Turner's WADE or from PTDIS.
g. 3-hour and 24-hour concentrations estimated using "Vol. 10R". Annual impacts are 1/7 of 24 hour impacts.

The results, for various distances, are shown in the table below:

D (km)	Q (T/yr)	1-hr Conc. (ug/m^3)	3-hr Conc. (ug/m^3)	24-hr Conc. (ug/m^3)	Annual Conc. (ug/m^3)
0.5	10	47	42	19	2.7
1.0	20	32	29	13	1.9
1.5	30	27	24	10	1.4
2.0	40	23	21	9	1.3
3	60	18	16	7	1.0
4	80	17	15	7	1.0
5	100	14	13	6	1
6	120	13	12	5	1
10	200	10	9	4	1
20	400	7	6	3	1
30	600	6	6	3	1
40	800	6	6	3	1
50	1000	7	6	3	1

The "Screening Threshold" method is conservative. Most sources either have effective stack heights greater than 10 meters, or they have several short stacks spread out over an industrial complex. Thus, actual modeled concentrations will most likely be lower than the "Screening Threshold" would indicate in the table above. One implication of the table is that all major sources within 5 km of the subject PSD source or within 5 km of the PSD source's impact area should be scrutinized before being exempted from the final emissions inventory.

The "Screening Threshold" method is in qualitative agreement with the suggestions on page I-C-18 of the Prevention of Significant Deterioration Workshop Manual (1980). On that page, it is suggested that a 100 T/Y source 10 km outside the impact area may be excluded from the analysis. The above table would exclude a 100 T/Y source more than 5 km beyond the impact area for long-term analyses or more than 5 km away from the PSD source for short-term analyses; if the source is inside the impact area, it must be included regardless of the "Screening

Threshold". The PSD Workshop Manual also states on page I-C-18 that a 10,000 T/Y source 40 km outside the impact area would probably have to be included in the increment analysis. By the "Screening Threshold" method, the critical distance D = Q/20 = 10,000/20 = 500 km. Thus a 10,000 T/Y source within 500 km would always be included for short-term and long-term analyses if within the screening area.

This "Screening Threshold" method is quick, inexpensive to execute, conservative, and consistent with the intent of the PSD Workshop Manual.

Table 1. Summary of Florida Ambient Air Quality Standards, PSD Increments, PSD Significant Emission Rates, Modeling Significance Levels, and Monitoring De Minimis Concentrations

Pollutant	Averaging Period	AAQS[a,b] Primary (µg/m^3)	AAQS[a,b] Primary (ppm)	AAQS[a,b] Secondary (µg/m^3)	AAQS[a,b] Secondary (ppm)	PSD Increments (µg/m^3) Class I	PSD Increments (µg/m^3) Class II	PSD Increments (µg/m^3) Class III	PSD Significant Emission Rates[c] (tons/year)	Modeling Significance Level (µg/m^3)	Monitoring De Minimis Concentrations (µg/m^3)
PM-10	Annual	50	--	Same as Primary		4	17	34	15[d]	1	--
	24-hour	150[e]	--	Same as Primary		8[e]	30[e]	60[e]		5	10
SO_2	Annual	60	--	--	--	2	20	40	40[d]	1	--
	24-hour	260[e]	--	--	--	5e	91[e]	182[e]		5	13
	3-hour	--	--	(1,300)[e]	0.5[e]	25[e]	512[e]	700[e]		25	--
NO_2	Annual	(100)	0.053	Same as Primary		2.5	25	50	40[d,g]	1	14
Ozone	1-hour	(235)[h]	0.12[h]	Same as Primary		--	--	--	40[i]	--	j
CO	8-hour	(10,000)[e]	9[e]	--	--	--	--	--	100	500	575
	1-hour	(40,000)[e]	35[e]	--	--	--	--	--		2,000	--
Lead	Quarter	1.5	--	Same as Primary		--	--	--	0.6	--	0.1[k]
Total Reduced Sulfur (Including H_2S)	1-hour	--	--	--	--	--	--	--	10	--	10
Reduced Sulfur Compounds (Including H_2S)	1-hour	--	--	--	--	--	--	--	10	--	10
Hydrogen Sulfide	1-hour	--	--	--	--	--	--	--	10	--	0.2

[a] The NAAQS are expressed in µg/m^3 for particulate matter and in ppm for the other pollutants. For reference, corresponding equivalent standards are shown in parentheses.
[b] Some states have adopted ambient air quality standards in addition to the NAAQS.
[c] Lower significant emissions rates apply in certain nonattainment areas for nonattainment new source review.
[d] For sources within 10 km of a Class I area, any emissions increase is significant if it has an impact ≥ 1µg/m^3 (24-hour average) in the Class I area.
[e] Concentration not to be exceeded more than once per year.
[f] The NAAQS for TSP were replaced by PM-10 on 7/31/87, and the PSD increments for TSP were replaced on 6/3/94. However, some states may continue to regulate TSP.
[g] The PSD Significant Emission Rate is assessed based on emissions of NO_x rather than NO_2.
[h] Concentration not to be exceeded more than three times within a 3-year period.
[i] The PSD Significant Emission Rate is assessed based on emissions of volatile organic compounds.
[j] Increase in volatile organic compounds great than 100 tons/year.
[k] Calculated based on a 3-month average.

Table 1. Summary of Florida Ambient Air Quality Standards, PSD Increments, PSD Significant Emission Rates, Modeling Significance Levels, and Monitoring De Minimis Concentrations (continued)

Pollutant	Averaging Period	AAQS		PSD Increments (μg/m³)			PSD Significant Emission Rates[c] (tons/year)	Modeling Significance Level (μg/m³)	Monitoring De Minimis Concentrations (μg/m³)
		Primary	Secondary	Class					
				I	II	III			
CFC's (11, 12, 113, 114, 155)	--	--	--	--	--	--	L	--	--
Halons	--	--	--	--	--	--	L	--	
Municipal Solid Waste Landfill Emissions	--	--	--	--	--	--	50[m]	--	--
Municipal Waste Combustor Acid Gases	--	--	--	--	--	--	40	--	--
MWC Metals	--	--	--	--	--	--	15	--	--
MWC Organics	--	--	--	--	--	--	$3.5x10^{-6}$	--	--
Sulfuric Acid Mist	--	--	--	--	--	--	7	--	--
Mercury[n]	24-hour	--	--	--	--	--	0.1	--	0.25
Beryllium[n]	24-hour	--	--	--	--	--	0.0004	--	0.001
Vinyl Chloride[n]	24-hour	--	--	--	--	--	1.0	--	15
Asbestos[n]	--	--	--	--	--	--	0.007	--	--
Fluorides[o]	24-hour	--	--	--	--	--	3	--	0.25
Arsenic[n]							L		
Benzene[n]							L		
Radionuclides[n]							L		

[L] A PSD Significant Emission Rate has not been established for this compound.
[m] Measured as nonmethane organic compounds.
[n] Removed from PSD applicability by the 1990 CAAA. However, some states may continue to regulate this pollutant under their PSD programs.
[o] Fluoride compounds other than HF, which was removed from PSD applicability by the 1990 CAAA. However, some states may continue to regulate HF under their PSD programs.

Table 2. Stack Parameters for Emission Sources at Proposed G-P Plant, Hosford

Model ID	Description	Stack Parameters							
		Stack Height		Stack Exit Temp		Stack Exit Velocity		Stack Diameter	
		(ft)	(m)	K	F	(fpm)	(m/s)	(in)	(m)
EP-1A	Dryer RTO Stack A	120.0	36.6	399.3	259.0	3013	15.31	102	2.59
EP-1B	Dryer RTO Stack B	120.0	36.6	399.3	259.0	3013	15.31	102	2.59
EP-2	Press Vent RTO Stack	100.0	30.5	340.9	154.0	3633	18.44	86	2.18
EP-3	Screen Fines/Saw Trim Baghouse	75.0	22.9	294.3	70.0	3143	15.97	28	0.71
EP-4	Saw Trim/Finishing Line Baghouse	70.0	21.3	294.3	70.0	2970	15.09	44	1.12
EP-5	Mat Reject/Flying Saw Baghouse	75.0	22.9	294.3	70.0	2986	15.15	48	1.22
EP-6	Specialty Saw/Sander Baghouse 1	70.0	21.3	294.3	70.0	2963	15.05	40	1.02
EP-7	Specialty Saw/Sander Baghouse 2	75.0	22.9	294.3	70.0	917	0.01[b]	10	0.25
EP-8	Forming Bins Baghouse CP-002	75.0	22.9	294.3	70.0	3084	15.67	30	0.76
EP-9	Hammermill/Dry Fuel System Baghouse	75.0	22.9	294.3	70.0	3056	15.52	30	0.76

Notes:

[a] Source Locations are with respect to the center of the press, in a True North coordinate system.

[b] Source has a raincap, exit velocity set equal to 0.01 m/s.

Table 3. Emission Rates for Sources at Proposed G-P Plant, Hosford									
		Proposed Facility-Wide Emissions							
Model ID	Description	PM (tpy)	PM (g/s)	CO (tpy)	CO (g/s)	NO_x (tpy)	NO_x (g/s)	HCOH (tpy)
EP-1A	Dryer RTO Stack A	163.05	4.69	73.58	2.12	160.53	4.62	4.05
EP-1B	Dryer RTO Stack B	163.05	4.69	73.58	2.12	160.53	4.62	4.05
EP-2	Press Vent RTO Stack	12.40	0.36	31.76	0.91	47.00	1.35	1.05
EP-3	Screen Fines/Saw Trim Baghouse CP-003	9.20	0.26	---	---	---	---	
EP-4	Saw Trim/Finishing Line Baghouse CP-001	11.5	0.33	---	---	---	---	
EP-5	Mat Reject/Flying Saw Baghouse CP-005	13.8	0.40	---	---	---	---	
EP-6	Specialty Saw/Sander Baghouse 1 CP-006-1	9.5	0.27	---	---	---	---	
EP-7	Fuel System Baghouse 2 CP-006-2	1.50	0.04	---	---	---	---	
EP-8	Forming Bins Baghouse CP-002	5.6	0.16	---	---	---	---	
EP-9	Hammermill/Dry Fuel System Baghouse	9.20	0.26	---	---	---	---	
Totals		386.75	11.46	178.91	5.15	368.05	10.59	9.15

Table 4. Listing Of UTM Coordinates for PSD Class I Areas	
PSD Class I Area	UTM (E,N) m Zone 16
Bradwell Bay NWA	728000.0, 3343000.0
	728000.0, 3341000.0
	731000.0, 3343000.0
	731000.0, 3341000.0
	731000.0, 3338000.0
	733000.0, 3343000.0
	733000.0, 3341000.0
	733000.0, 3338000.0
	733000.0, 3336000.0
	733000.0, 3333000.0
	736000.0, 3346000.0
	736000.0, 3343000.0
	736000.0, 3341000.0
	736000.0, 3338000.0
	736000.0, 3336000.0
	738000.0, 3343000.0
	738000.0, 3341000.0
	741000.0, 3341000.0
St. Marks NWA	
	770000.0, 3338000.0
	770000.0, 3336000.0
	772000.0, 3336000.0
	772000.0, 3333000.0
	772000.0, 3331000.0
	775000.0, 3333000.0
	775000.0, 3331000.0
	777000.0, 3333000.0
	780000.0, 3333000.0
	782000.0, 3336000.0
	782000.0, 3333000.0
	785000.0, 3336000.0
	785000.0, 3333000.0
	787000.0, 3336000.0
	787000.0, 3333000.0

Georgia-Pacific

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P.O. Box 105605
Atlanta, GA 30348-5605
(404) 652-4293
(404) 654-4706 - Fax Number

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TO	FAX NUMBER
Clair Fancy P.E.	850 922-6979

LOCATION/DEPARTMENT	FLOOR

FROM
Mark Aguilar (404) 652-4293

LOCATION/DEPARTMENT	FLOOR
G-P Atlanta	9

COMMENTS:

Air Dispersion Modeling Protocol for the proposed Georgia-Pacific Corporation facility at Hosford. The original is being sent via mail with topographic maps.

Please contact me with any questions at (404) 652-4293. Thank you.

IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL (404) 652-4293

Georgia-Pacific Corporation
133 Peachtree Street NE (30303-1847)
P.O. Box 105605
Atlanta, Georgia 30348-5605
Telephone (404) 652-4000

January 28, 1999

Mr. Clair Fancy P.E.
Bureau of Air Management
Florida Department of Environmental Protection
2600 Blair Stone Rd
MS -5505
Tallahassee, FL 32399-2400

RE: Air Dispersion Modeling Protocol for Proposed Georgia-Pacific Hosford Facility

Dear Mr. Fancy:

Georgia-Pacific Corporation (G-P) is preparing a Prevention of Significant Deterioration (PSD) air permit application for a proposed Oriented Strandboard (OSB) manufacturing facility. The application will include an air quality analysis. To simplify the Florida Department of Environmental Protection (FDEP) review of the analysis, G-P requests FDEP's approval of this air dispersion modeling protocol. The protocol addresses: modeling methodology, model selection, source inventories, building downwash, receptor locations, meteorological data, and background air quality.

A summary of the modeling protocol is as follows:

Parameter	Proposed Protocol
Model Selection	ISCST3 98356 , VISCREEN 1.1
Source Inventory	All on-site quantifiable point sources plus off-site sources within screening area. The North Carolina Screening Technique will be applied. G-P will request off-site source inventory data once the impact areas for all pollutants are determined.
Building Downwash	All solid buildings will be analyzed with BPIP (95086)
Receptors	Polar grids, spaced at 10-degree increments will be used for screening. Maximum impacts will be refined to 100-meter (m) spacing.
Meteorological Data	Tallahassee/Waycross 1982-1986. Anemometer height of 25 feet.
Ambient Air Quality	Appropriate ambient air quality data will be requested by G-P in a separate letter.

The information needed by G-P to complete the analysis is as follows:

- Background air quality data
- Competing Source inventories for Ambient Air Quality Standards (AAQS) and PSD Class II increments
- PSD Class I increment inventory for St. Marks and Bradwell Bay Wilderness Areas

Project Description

The OSB facility will consist of material handling sources, pressing and drying equipment, appropriate control equipment, and buildings to produce approximately 475 million square feet per year. The project area is located approximately 30 miles west, southwest of Tallahassee. More specifically, the facility will be located in Liberty County, near Hosford. The area is currently undeveloped. The UTM coordinate for the project area is 713.5 E, 3369.5 N kilometers (km), Zone 16.

The proposed project will result in emissions increases above the US Environmental Protection Agency (EPA) PSD significant emission rate levels for several criteria pollutants including:

- ozone (based on the increase in volatile organic compound (VOC) emissions)
- Total suspended particulate matter (TSP)
- particulate matter less than 10 microns in diameter (PM_{10})
- nitrogen oxides (NO_x)
- carbon monoxide (CO).

Further information on individual sources is presented below.

Air Quality Analysis Methodology

General

An analysis will be performed for PSD Class II and PSD Class I areas. A summary of applicable air standards is presented in Table 1 in the Appendix. For PSD Class II areas, the analysis will be performed in two steps: Significant Impact Analysis and Full Analysis. The significant impact analysis will model the project for all pollutants listed above (except ozone). The maximum impact of these pollutants will be compared to two levels:

- EPA significant impact levels (SILs)
- EPA monitoring significance levels

For each pollutant, if the maximum impacts are less than these levels, no further analysis is required. If the maximum impacts are greater than the SILs, then the pollutant will be modeled for compliance with the

Florida Ambient Air Quality Standards (AAQS) and PSD Class II allowable increments. If the maximum impacts are greater than the monitoring significance levels, then permit application will address separate requirements for ambient monitoring.

PM_{10}

The form of the PM_{10} standard was affected by the final rule published in the Federal Register on July 10, 1998. The 24-hour averaging time standard was changed from a sixth highest in five years to a 99th percentile over 3 years. In response to the notice, EPA issued interim guidance on how modeling analyses may demonstrate compliance. A copy of this letter is presented in the Appendix. The analysis will use the H4H 24-hour impacts. The proposed approach is more conservative than the EPA interim guidance. Predicted impacts for the annual averaging time will be computed by using the maximum of five annual average impacts at each location.

PSD Class I

For PSD Class I areas, the analysis will also be performed in two steps: Significant Impact Analysis and Full Analysis. EPA has proposed SILs for the PSD Class I areas for NO_X, and PM_{10}. For the significant impact analysis the maximum impact of will be compared to SILs. For each pollutant, if the maximum impacts are less than these levels, no further analysis is required. Otherwise, the pollutant will be modeled for comparison to the PSD Class I allowable increment.

In summary, the full analysis will compare model impacts to the standards as follows:

Pollutant	AAQS and will be compared to:	PSD Class II Increments will be compared to:	PSD Class I Increments will be compared to:
CO	Highest, Second Highest (HSH) 1-hour and 8-hour	No applicable standard	No applicable standard
NO_2	Annual average	Annual average	Annual average
PM_{10}	Annual average and Highest, Fourth Highest (H4H) for 24-hour	Annual average and HSH for 24-hour	Annual average and HSH for 24-hour

Air-Quality Related Values (AQRVs)

The project area is within 50 km of two PSD Class I areas : Bradwell Bay and St. Marks National Wilderness Areas (NWAs). In accordance with the PSD regulations, an analysis will be made in these areas for plume blight using the VISCREEN Model. **G-P requests that FDEP provide an appropriate background visual range for use in the VISCREEN model.** No other PSD Class I areas are within 200 km of the site.

Model Selection

The Industrial Source Complex Short-term model (ISCST3, Version 98356) will be used to predict air quality impacts at all areas in the vicinity of the project site. All modeling analyses will use the EPA default regulatory options. The land use within a 3-km radius of the Hosford facility is rural. Therefore, the modeling analysis will use the rural option for dispersion coefficients and wind speed profile exponents. Also, the terrain elevations in the vicinity of the site are flat. Therefore, no elevation data will be applied for source and receptor locations. Please see the Appendix for topographic maps of the project area.

Emission Inventories

The analysis will model all G-P point sources and appropriate competing (off-site) sources. Tables 2 and 3 present the emission rates and source parameters for the proposed facility. The data reflects control equipment. The sources are: six pneumatic transfer systems with bagfilters and three regenerative thermal oxidizers (RTOs) controlling the presses and dryers. All sources will operate continuously and simultaneously.

Preliminary modeling has indicated that the project will produce significant impacts for PM_{10} and NO_2 out to distances of 10 and 1 km, respectively. For determining compliance with the AAQS and PSD Class II allowable increments, G-P will develop a competing facility emission inventory that will include areas out to 60 and 1 km from the facility for PM_{10} and NO_x, respectively. **This task requires FDEP data on nearby facilities.**

Competing facilities will be screened for inclusion in the modeling inventory. An analysis with the North Carolina Screening Technique will determine if competing facilities are expected to cause a significant concentration gradient in the vicinity of the Hosford facility. If this is true, the facility will be included in the modeling inventory. A copy of the Screening Technique is presented in the Appendix.

For determining compliance with the PSD Class I allowable increments (if necessary), G-P will develop a PSD increment emission inventory based on the PSD Class I area. **This task also requires FDEP data on increment consuming and expanding facilities near the Class I areas.**

Building Wake Effects

The analysis will also address the potential for building-induced downwash. Dimensions for all significant building structures at the proposed facility will be entered into the EPA's Building Profile Input Program (BPIP, Version 95086). The BPIP program will then be used with stack height data for the proposed sources to determine direction-specific building heights and widths that can be directly included in the ISCST3 modeling analysis.

Receptor Locations

For all analyses, screening and refined polar receptor grids will be used. All screening grids will include 36 radials, spaced at 10-degree increments. Along each radial, a receptor will be located at the fenceline, and at 100 to 500 m increments out to a downwind distance of 5 km. Beyond 5 km, receptors will be placed along each radial at 1 and 2 km increments. The significant impact analysis will determine the greatest distance at which impacts equal to the SILs are expected. For all analyses, refined grids will only be applied if the spacing in the vicinity of screening grid maximum impact is greater than 100 m. Refined grids will be centered on the screening grid maximum impact location and will include radials spaced at 2-degree increments between the adjacent screening grid receptor locations. Distances along each refined grid radial will be 100 m.

The closest PSD Class I area to the site are the Bradwell Bay and St. Marks NWAs. These areas are approximately 35 and 45 km from the project area, respectively. A rectangular array of discrete receptors for these areas was prepared. The receptor locations entirely cover the NWAs spaced 1 km apart from one another. The receptor locations for the PSD Class I areas are tabulated in Table 4.

Meteorological Data

Impacts will be predicted using hourly meteorological data for the five-year period 1982-1986. The meteorological data will be comprised of hourly surface data and upper air data collected at the Tallahassee

Regional Airport and Waycross, Georgia Airport, respectively. These data have been provided to consultants for G-P by FDEP during previous air modeling studies. The anemometer height is 25 feet.

Background Concentrations

Air quality data for use in the Hosford facility analysis will be provided by FDEP. The non-modeled background concentration will represent impacts from sources not explicitly included in the air modeling analysis. These background data will be added to the modeling results for comparison to the AAQS. **This task also requires FDEP data for the selection of appropriate background values.**

Please call me if you have any questions or comments on the protocol. I can be reached at (404) 652-4293 and (404) 652-4706 (FAX). G-P appreciates the cooperation of the FDEP in reviewing this air dispersion modeling protocol for the G-P Hosford facility.

Sincerely yours,

Mark J. Aguilar

Mark J. Aguilar P.E.
Environmental Engineer
Georgia-Pacific Corporation

Enclosures : Appendix with Tables 1-4, topographic maps, EPA correspondence, North Carolina Screening Technique

Cc: Bobby Cooley P.E., FDEP Pensacola
Paul Vasquez, G-P Atlanta
Tammy Wyles, G-P Atlanta
Margaret Vest P.E., G-P Palatka

APPENDIX

- March 17, 1998 Interim Guidance from EPA for Air Modeling Compliance Demonstration of the 1997 Revised form of the PM_{10} 24-hour Standard
- North Carolina Screening Technique
- Table 1. Summary of Applicable Air Quality Standards
- Table 2. Summary of Source Parameters
- Table 3. Summary of Emission Rates
- Table 4. PSD Class I Area Receptor Coordinates

MAR 17 1998

MEMORANDUM

SUBJECT: Modeling for Revised PM_{10} Standards

FROM: William F. Hunt, Jr.
Director, Emissions, Monitoring, and Analysis Division (MD-14)

TO: See Addressees

This memorandum provides interim guidance for modeling PM_{10} when the results of the modeling need to be compared to the revised PM_{10} National Ambient Air Quality Standards (NAAQS), which were promulgated in July 1997. Final guidance will take the form of a revision to the Guideline on Air Quality Models.

Modeling for the revised PM_{10} standards poses some potential issues, as the revised standards are explicitly specified as 3-year air quality averages (See 40CFR Part50 Appendix N, 62FR38678), and meteorological data bases for modeling do not generally correspond to this length of record. While the explicit specification of a 3-year average makes it somewhat difficult to define a surrogate modeling procedure which deals precisely with this form of the standard, statistics from modeling simulations based on 1 or 5 years of meteorological data can be viewed as unbiased estimates of specific 3-year periods. Thus, based on a number of meetings and discussions among personnel from the Integrated Strategies Group, the Integrated Implementation Group, the Air Quality Trends Analysis Group, and the Air Quality Modeling Group, the following procedures are recommended when modeling for the revised PM_{10} standards:

1. When 1 year of on-site meteorological data are available for modeling, at each receptor calculate the fourth-high 24-hour estimate as an unbiased estimate of the three-year average 99th percentile value, for comparison with the revised PM_{10} NAAQS. Analogously, at each receptor calculate the annual estimate as an unbiased estimate of the 3-year average annual air quality value. The simulation demonstrates compliance when all the values are at or below the revised PM_{10} NAAQS.

2. When 5 years of representative off-site meteorological data are available for modeling, the entire 5-year period should be used to calculate, at each receptor, the 5-year average of the annual fourth-high 24-hour estimates and the 5-year average of the annual average estimates.

The resulting values would serve as unbiased estimates for the 3-year average 99th percentile and annual concentrations, respectively, for comparison with the NAAQS. As above, to determine whether the entire area is in compliance, the values at the highest receptors are compared to the revised PM_{10} NAAQS.

The primary reasons for these recommendations are:

1. Modeling is data base driven, as opposed to standards driven. Historically, we have placed primary importance in having the most spatially- (most important) and temporally- representative data base as is possible. Then, we have adapted model output to meet the various forms of the standards, within practical limitations. Pursuant to that philosophy is the long- standing requirement for at least 1 year of on-site meteorological data or 5 years of representative off-site meteorological data. As new standards have been promulgated over the years, we have adapted model output to deal with the forms of these standards, while at the same time maintaining the meteorological data base requirement. For example, when the original PM_{10} standards were promulgated we adapted the model output to provide the high-second high, if 1 year of meteorological data were available, or the high-sixth-high, if 5 years of data were used in the modeling. These estimates are considered unbiased estimates of the expected high-second-high concentration. The recommendations above are yet another adaptation of model output to deal with another revised form of the standards, retaining the meteorological data base requirements from the past.

2. As you are aware, there are many circumstances where off-site data are not sufficiently representative to allow for technically defensible model estimates. Yet it is impractical to require the collection of 3 years of on-site meteorological data before modeling can be done for an area or for a new source. Thus, some kind of surrogate modeling procedure is needed that will allow utilization of the 1 year of data. The use of the 1 year of data in modeling to provide an unbiased estimate of the 3-year average of the fourth-high concentration is the best technique apparent to us.

3. It is also impractical, and less than optimum from a technical standpoint, to use only 3 years of representative off site data in the modeling, when 5 years of such data are readily available. Data bases from National Weather Service stations, readily available on the Support Center for Regulatory Air Modeling (SCRAM) Web site or from the National Climatic Data Center, take the form of 5-year data blocks. Since meteorology and air quality are, for practical purposes, independent data bases, it makes the most sense to use as much meteorology as possible in order to make the most robust estimate of the 3-year average.

4. The form of the revised PM_{10} standards includes specifications that they apply at actual atmospheric conditions, as opposed to standard conditions (STP). This is not a concern for modeling as modeling is routinely done at actual conditions.

Implementation of this modeling policy will require a modification to the output of the ISC3 model and perhaps other models. We will begin working on the ISC3 modification as soon as possible. If you have a need to model for the new PM_{10} standards before these model changes are completed, please contact Dennis Doll at the Model Clearinghouse for assistance. Also, as noted above, we recognize that we will need to make some changes to the Guideline on Air Quality Models to formally specify this guidance. This task will be added to other planned Guideline revisions. In the meantime, use this interim policy as your guide when dealing with PM_{10} modeling. If issues come up relative to this policy, please contact Dennis Doll at (919) 541-5693.

Addressees:
Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning and Protection, Region II
Director, Air, Radiation, and Toxics Division, Region III
Director, Air, Pesticides, and Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Multimedia Planning and Permitting Division, Region VI
Director, Air, RCRA, and Toxics Division, Region VII
Assistant Regional Administrator, Office of Pollution
Prevention, State and Tribal Assistance, Region VIII
Director, Air and Toxics Division, Region IX
Director, Office of Air Quality, Region X

cc: Regional Modeling Contact, Regions I-X
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M. Wayland

bcc: E. Baldridge
W. Cox
J. Irwin

OAQPS/EMAD/AQMG/DWILSON/bhighsmith:MD-14:X14341:3/9/98
Filename:f/user/bhighsmith/huntmemo

State of North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
S. Thomas Rhodes, Secretary

July 22, 1985

R. Paul Wilms
Director

Mr. Lewis Nagler
Air Management Branch
EPA Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Nagler:

Subject: A Screening Method for PSD

A simple screening procedure which is applicable to PSD has been developed by the North Carolina Air Quality Section. The "Screening Threshold" method is designed to rapidly and objectively eliminate from the emissions inventory those sources which are beyond the PSD impact area yet within the screening area, but are not likely to have significant interaction with the PSD source. Sources which are flagged by this procedure may then be evaluated with conventional screening techniques, or else be included in refined modeling.

Page I-C-18 of the PSD Workshop Manual does state "A simple screening model technique can be used to justify the exclusion of certain emissions...Such exclusions should be justified and documented." The "Screening Threshold" method is documented in the attachment.

We would very much appreciate your comments and ultimate approval. Please feel free to direct any questions or comments to me in writing or by phone at (919) 733-7015.

Sincerely,

Eldewins Haynes

Eldewins Haynes, Meteorologist
Air Permit Unit

Attachment

cc: Mr. Ogden Gerald
Mr. Mike Sewell
Mr. Sammy Amerson
Mr. Jerry Clayton
Mr. Richard Laster
Regional Air Engineers

"Screening Threshold" Method for PSD Modeling
North Carolina Air Quality Section

This method is best suited for situations where a PSD source has several sources outside its impact area, but within its screening area. The object is to find an effective means to minimize the number of such sources in a model, yet to include all sources which are likely to have a significant impact inside the impact area.

As a first-level screening technique, it is suggested to include those sources within the screening area when

$$Q \geq 20D$$

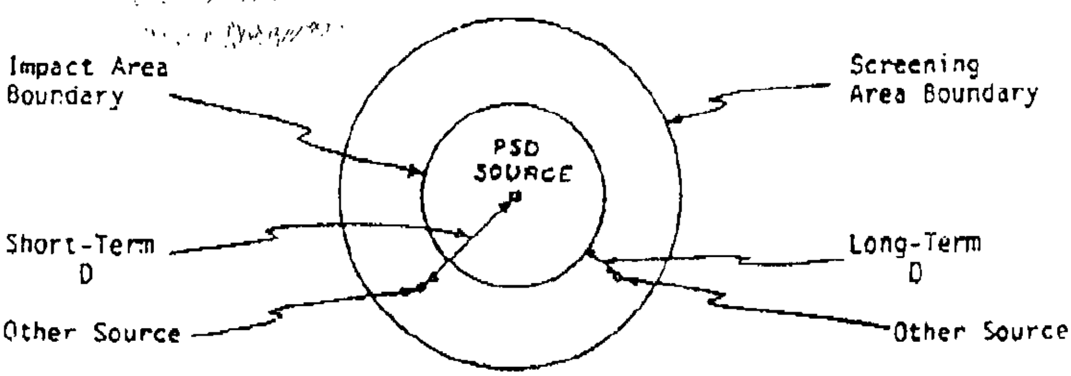
where Q is the maximum emission rate, in tons/year, of the source in the screening area; and D is a distance, in kilometers, from either:

a. the source in the screening area to the nearest edge of the impact area, for long-term analyses

or

b. the source in the screening area to the PSD source defining the impact area, for short-term analyses.

The figure below illustrates the difference between the long-term D and the short-term D.



This method does not preclude the use of alternate screening techniques or of more sophisticated screening techniques given the approval of the review agency. Also, this method does not prevent the review agency from specifying additional sources of interest in the modeling analysis.

The justification for this "Screening Threshold Method" rests upon the following assumptions:

a. effective stack height = 10 meters
b. stability class D (neutral)
c. 2.5 meter/second wind speed
d. mixing height = 300 meters
e. Q = 200 = critical emission rate for a given pollutant .
f. one-hour concentrations derived from figure 3-5D in Turner's WADE or from PTDIS.
g. 3-hour and 24-hour concentrations estimated using "Vol. 10R". Annual impacts are 1/7 of 24 hour impacts.

The results, for various distances, are shown in the table below:

D (km)	Q (T/yr)	1-hr Conc. (ug/m³)	3-hr Conc. (ug/m³)	24-hr Conc. (ug/m³)	Annual Conc. (ug/m³)
0.5	10	47	42	19	2.7
1.0	20	32	29	13	1.9
1.5	30	27	24	10	1.4
2.0	40	23	21	9	1.3
3	60	18	16	7	1.0
4	80	17	15	7	1.0
5	100	14	13	6	1
6	120	13	12	5	1
10	200	10	9	4	1
20	400	7	6	3	1
30	600	6	6	3	1
40	800	6	6	3	1
50	1000	7	6	3	1

The "Screening Threshold" method is conservative. Most sources either have effective stack heights greater than 10 meters, or they have several short stacks spread out over an industrial complex. Thus, actual modeled concentrations will most likely be lower than the "Screening Threshold" would indicate in the table above. One implication of the table is that all major sources within 5 km of the subject PSD source or within 5 km of the PSD source's impact area should be scrutinized before being exempted from the final emissions inventory.

The "Screening Threshold" method is in qualitative agreement with the suggestions on page I-C-18 of the <u>Prevention of Significant Deterioration Workshop Manual (1980)</u>. On that page, it is suggested that a 100 T/Y source 10 km outside the impact area may be excluded from the analysis. The above table would exclude a 100 T/Y source more than 5 km beyond the impact area for long-term analyses or more than 5 km away from the PSD source for short-term analyses; if the source is inside the impact area, it must be included regardless of the "Screening

Threshold". The PSD Workshop Manual also states on page I-C-18 that a 10,000 T/Y source 40 km outside the impact area would probably have to be included in the increment analysis. By the "Screening Threshold" method, the critical distance D = Q/20 = 10,000/20 = 500 km. Thus a 10,000 T/Y source within 500 km would always be included for short-term and long-term analyses if within the screening area.

This "Screening Threshold" method is quick, inexpensive to execute, conservative, and consistent with the intent of the PSD Workshop Manual.

Topographic Map of Hosford Area

(To be provided in original copy via mail)

Table 1. Summary of Florida Ambient Air Quality Standards, PSD Increments, PSD Significant Emission Rates, Modeling Significance Levels, and Monitoring De Minimis Concentrations

Pollutant	Averaging Period	AAQS[a,b] Primary ($\mu g/m^3$)	AAQS Primary (ppm)	AAQS Secondary ($\mu g/m^3$)	AAQS Secondary (ppm)	PSD Increments ($\mu g/m^3$) Class I	Class II	Class III	PSD Significant Emission Rates[c] (tons/year)	Modeling Significance Level ($\mu g/m^3$)	Monitoring De Minimis Concentrations ($\mu g/m^3$)
PM-10	Annual	50	--	Same as Primary		4	17	34	15[d]	1	--
	24-hour	150[e]	--	Same as Primary		8[e]	30[e]	60[e]		5	10
SO_2	Annual	60	--	--	--	2	20	40	40[d]	1	--
	24-hour	260[e]	--	--	--	5e	91[e]	182[e]		5	13
	3-hour	--	--	(1,300)[e]	0.5[e]	25[e]	512[e]	700[e]		25	--
NO_2	Annual	(100)	0.053	Same as Primary		2.5	25	50	40[d,g]	1	14
Ozone	1-hour	(235)[h]	0.12[h]	Same as Primary		--	--	--	40[i]	--	j
CO	8-hour	(10,000)[e]	9[e]	--	--	--	--	--	100	500	575
	1-hour	(40,000)[e]	35[e]	--	--	--	--	--		2,000	--
Lead	Quarter	1.5	--	Same as Primary		--	--	--	0.6	--	0.1[k]
Total Reduced Sulfur (Including H_2S)	1-hour	--	--	--	--	--	--	--	10	--	10
Reduced Sulfur Compounds (Including H_2S)	1-hour	--	--	--	--	--	--	--	10	--	10
Hydrogen Sulfide	1-hour	--	--	--	--	--	--	--	10	--	0.2

[a] The NAAQS are expressed in $\mu g/m^3$ for particulate matter and in ppm for the other pollutants. For reference, corresponding equivalent standards are shown in parentheses.
[b] Some states have adopted ambient air quality standards in addition to the NAAQS.
[c] Lower significant emissions rates apply in certain nonattainment areas for nonattainment new source review.
[d] For sources within 10 km of a Class I area, any emissions increase is significant if it has an impact ≥ 1$\mu g/m^3$ (24-hour average) in the Class I area.
[e] Concentration not to be exceeded more than once per year.
[f] The NAAQS for TSP were replaced by PM-10 on 7/31/87, and the PSD increments for TSP were replaced on 6/3/94. However, some states may continue to regulate TSP.
[g] The PSD Significant Emission Rate is assessed based on emissions of NO_x rather than NO_2.
[h] Concentration not to be exceeded more than three times within a 3-year period.
[i] The PSD Significant Emission Rate is assessed based on emissions of volatile organic compounds.
[j] Increase in volatile organic compounds great than 100 tons/year.
[k] Calculated based on a 3-month average.

Table 1. Summary of Florida Ambient Air Quality Standards, PSD Increments, PSD Significant Emission Rates, Modeling Significance Levels, and Monitoring De Minimis Concentrations (continued)

Pollutant	Averaging Period	AAQS Primary	AAQS Secondary	PSD Increments ($\mu g/m^3$) Class I	Class II	Class III	PSD Significant Emission Rates[c] (tons/year)	Modeling Significance Level ($\mu g/m^3$)	Monitoring De Minimis Concentrations ($\mu g/m^3$)
CFC's (11, 12, 113, 114, 155)	--	--	--	--	--	--	L	--	--
Halons	--	--	--	--	--	--	L	--	
Municipal Solid Waste Landfill Emissions	--	--	--	--	--	--	50[m]	--	--
Municipal Waste Combustor Acid Gases	--	--	--	--	--	--	40	--	--
MWC Metals	--	--	--	--	--	--	15	--	--
MWC Organics	--	--	--	--	--	--	3.5×10^{-6}	--	--
Sulfuric Acid Mist	--	--	--	--	--	--	7	--	--
Mercury[a]	24-hour	--	--	--	--	--	0.1	--	0.25
Beryllium[a]	24-hour	--	--	--	--	--	0.0004	--	0.001
Vinyl Chloride[a]	24-hour	--	--	--	--	--	1.0	--	15
Asbestos[a]	--	--	--	--	--	--	0.007	--	--
Fluorides[e]	24-hour	--	--	--	--	--	3	--	0.25
Arsenic[a]							L		
Benzene[a]							L		
Radionuclides[a]							L		

[L] A PSD Significant Emission Rate has not been established for this compound.

[m] Measured as nonmethane organic compounds.

[a] Removed from PSD applicability by the 1990 CAAA. However, some states may continue to regulate this pollutant under their PSD programs.

[e] Fluoride compounds other than HF, which was removed from PSD applicability by the 1990 CAAA. However, some states may continue to regulate HF under their PSD programs.

Table 2. Stack Parameters for Emission Sources at Proposed G-P Plant, Hosford

Model ID	Description	Stack Parameters							
		Stack Height		Stack Exit Temp		Stack Exit Velocity		Stack Diameter	
		(ft)	(m)	K	F	(fpm)	(m/s)	(in)	(m)
EP-1A	Dryer RTO Stack A	120.0	36.6	399.3	259.0	3013	15.31	102	2.59
EP-1B	Dryer RTO Stack B	120.0	36.6	399.3	259.0	3013	15.31	102	2.59
EP-2	Press Vent RTO Stack	100.0	30.5	340.9	154.0	3633	18.44	86	2.18
EP-3	Screen Fines/Saw Trim Baghouse	75.0	22.9	294.3	70.0	3143	15.97	28	0.71
EP-4	Saw Trim/Finishing Line Baghouse	70.0	21.3	294.3	70.0	2970	15.09	44	1.12
EP-5	Mat Reject/Flying Saw Baghouse	75.0	22.9	294.3	70.0	2986	15.15	48	1.22
EP-6	Specialty Saw/Sander Baghouse 1	70.0	21.3	294.3	70.0	2963	15.05	40	1.02
EP-7	Specialty Saw/Sander Baghouse 2	75.0	22.9	294.3	70.0	917	0.01[b]	10	0.25
EP-8	Forming Bins Baghouse CP-002	75.0	22.9	294.3	70.0	3084	15.67	30	0.76
EP-9	Hammermill/Dry Fuel System Baghouse	75.0	22.9	294.3	70.0	3056	15.52	30	0.76

Notes:

[a] Source Locations are with respect to the center of the press, in a True North coordinate system.

[b] Source has a raincap, exit velocity set equal to 0.01 m/s.

Table 3. Emission Rates for Sources at Proposed G-P Plant, Hosford

Model ID	Description	Proposed Facility-Wide Emissions						
		PM (tpy)	PM (g/s)	CO (tpy)	CO (g/s)	NO_x (tpy)	NO_x (g/s)	HCOH (tpy)
EP-1A	Dryer RTO Stack A	163.05	4.69	73.58	2.12	160.53	4.62	4.05
EP-1B	Dryer RTO Stack B	163.05	4.69	73.58	2.12	160.53	4.62	4.05
EP-2	Press Vent RTO Stack	12.40	0.36	31.76	0.91	47.00	1.35	1.05
EP-3	Screen Fines/Saw Trim Baghouse CP-003	9.20	0.26	---	---	---	---	
EP-4	Saw Trim/Finishing Line Baghouse CP-001	11.5	0.33	---	---	---	---	
EP-5	Mat Reject/Flying Saw Baghouse CP-005	13.8	0.40	---	---	---	---	
EP-6	Specialty Saw/Sander Baghouse 1 CP-006-1	9.5	0.27	---	---	---	---	
EP-7	Fuel System Baghouse 2 CP-006-2	1.50	0.04	---	---	---	---	
EP-8	Forming Bins Baghouse CP-002	5.6	0.16	---	---	---	---	
EP-9	Hammermill/Dry Fuel System Baghouse	9.20	0.26	---	---	---	---	
Totals		386.75	11.46	178.91	5.15	368.05	10.59	9.15

Table 4. Listing Of UTM Coordinates for PSD Class I Areas

PSD Class I Area	UTM (E,N) m Zone 16
Bradwell Bay NWA	728000.0, 3343000.0
	728000.0, 3341000.0
	731000.0, 3343000.0
	731000.0, 3341000.0
	731000.0, 3338000.0
	733000.0, 3343000.0
	733000.0, 3341000.0
	733000.0, 3338000.0
	733000.0, 3336000.0
	733000.0, 3333000.0
	736000.0, 3346000.0
	736000.0, 3343000.0
	736000.0, 3341000.0
	736000.0, 3338000.0
	736000.0, 3336000.0
	738000.0, 3343000.0
	738000.0, 3341000.0
	741000.0, 3341000.0
St. Marks NWA	
	770000.0, 3338000.0
	770000.0, 3336000.0
	772000.0, 3336000.0
	772000.0, 3333000.0
	772000.0, 3331000.0
	775000.0, 3333000.0
	775000.0, 3331000.0
	777000.0, 3333000.0
	780000.0, 3333000.0
	782000.0, 3336000.0
	782000.0, 3333000.0
	785000.0, 3336000.0
	785000.0, 3333000.0
	787000.0, 3336000.0
	787000.0, 3333000.0