

# **Prevention of Significant Air Quality Deterioration Review**

## **Final Determination**

March 2010

Facility Name: The Procter & Gamble Paper Products Company – Albany

City: Albany

County: Dougherty

AIRS Number: 04-13-095-00071

Application Number: 17646

Date Application Received: August 30, 2007, updated May 29, 2009



State of Georgia  
Department of Natural Resources  
Environmental Protection Division  
Air Protection Branch

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## BACKGROUND

On August 30, 2007, The Procter & Gamble Paper Products Company (hereafter P&G) submitted an Application No. 17646 for an air quality permit to modify Paper Machines 1APM through 6APM, to upgrade existing Yankee Burners 2AYD and 3AYD, and to install a new Yankee Burner 1AYD. An update to Application No. 17646 was received by the Division on May 29, 2009. The facility is located at 512 Liberty Expressway Southeast in Albany, Dougherty County.

This paper machine project includes conducting miscellaneous debottlenecking and process improvement modifications and upgrades to existing Paper Machines 1APM through 6APM to accommodate advances in paper making technology. The modifications will result in moderate speed increases of the paper machines and will enhance the product flexibility of the paper machines.

Also included in this paper machine project will be the installation of a new Yankee Burner 1AYD that will serve Paper Machine 1APM and the upgrade of existing Yankee Burners 2AYD and 3AYD serving Paper Machines 2APM and 3APM, respectively. Yankee Burners 1AYD, 2AYD, and 3AYD will each be designed to fire only natural gas and liquefied petroleum gas (LPG) and will each have a maximum heat input capacity of 95 million Btu per hour (MMBtu/hr).

On December 18, 2009, the Division issued a Preliminary Determination stating that the modifications described in Application No. 17646 should be approved. The Preliminary Determination contained a draft Air Quality Permit for the construction and operation of the modified equipment.

The Division requested that P&G place a public notice in a newspaper of general circulation in the area of the existing facility notifying the public of the proposed construction and providing the opportunity for written public comment. Such public notice was placed in *The Albany Herald* (legal organ for Dougherty County) on January 8, 2010. The public comment period expired on February 8, 2010.

During the comment period, comments were received from U.S. EPA Region 4 and the facility. There were no comments received from the general public.

A copy of the final permit is included in Appendix A. A copy of written comments received during the public comment period is provided in Appendix B.

### U.S. EPA REGION 4 COMMENTS

Comments were received from Lorinda Shepherd, Environmental Scientist, U.S. EPA Region 4, by email on January 26, 2010. The comments are typed, verbatim, below and were the result of reviews by Lorinda Shepherd of U.S. EPA Region 4.

#### **Comment 1**

In reviewing the Draft Permit and Preliminary Determination, Region 4 finds that the permitting authority has not provided an adequate rationale to support the use of the PM<sub>10</sub> surrogate approach for this project. The Preliminary Determination should contain an analysis as to whether or not PM<sub>10</sub> is a reasonable surrogate for PM<sub>2.5</sub> under the facts and circumstances of the specific project at issue and not proceed with the general presumption that PM<sub>10</sub> is always a reasonable surrogate for PM<sub>2.5</sub>.

**EPD Response:** The following considerations are provided to explain why EPD has determined that PM<sub>10</sub> should serve as the surrogate for PM<sub>2.5</sub> in this PSD determination:

There is a strong statistical relationship between PM<sub>10</sub> and PM<sub>2.5</sub> Emissions. PM<sub>2.5</sub> is a subset of PM<sub>10</sub>; all PM<sub>2.5</sub> will be included in PM<sub>10</sub> evaluations. Further, there is a predictable correlation between PM<sub>2.5</sub> and PM<sub>10</sub> emissions and control efficiencies from emission units associated with the project, consistent under the range of operating scenarios and conditions expected. The degree of control for both PM<sub>10</sub> and PM<sub>2.5</sub> are influenced by the same control device operating parameters, such that proper operation of the control devices to minimize PM<sub>10</sub> emissions (as well as additional control train equipment installed for other purposes) will simultaneously minimize PM<sub>2.5</sub> emissions.

The BACT selected for PM<sub>10</sub> is also the most effective technology (and would be considered BACT) for PM<sub>2.5</sub> emissions.

US EPA has yet to established final values for significant impact level (SIL) or PSD Increment. In addition, EPA has yet to establish a final Minor Source Baseline Date. While EPA has recently proposed three possible values for these levels, the SIL and increment are likened to a moving target – if and when EPA sets the final, they may be any one of the proposed values, or a completely different value. US EPA Region 4 itself commented to EPD (regarding the Plant Washington Preliminary Determination), questioning EPD's decision to use the most stringent of the proposed SILs.

There is insufficient technical guidance from US EPA regarding measurement of PM<sub>2.5</sub>. There is not currently an accurate and accepted methodology for quantifying both filterable and condensable PM<sub>2.5</sub> emissions for most types of emission sources. For filterable PM<sub>2.5</sub>, short of assuming all PM is PM<sub>2.5</sub>, there is no EPA-approved test method currently in place. This is particularly true for sources with stack emissions containing condensed water droplets. For condensable PM<sub>2.5</sub>, existing test methods have been shown to produce inconsistent and variable results that can also be biased high due to artifacts. For this reason, EPA chose to adopt a transition period in the final PM<sub>2.5</sub> implementation rule during which PSD permits would not need to address condensable PM<sub>2.5</sub> emissions. Due to the lack of accurate and available test methods, there is limited data available on PM<sub>2.5</sub> emissions (both filterable and condensable) for most types of emission sources. While data that is available may be useful for defining general correlations and relationships between PM<sub>2.5</sub> and other pollutants, it is not of sufficient quantity or accuracy for setting emission limits. This lack of information would not only affect the setting of PM<sub>2.5</sub> BACT limits, but would restrict an accurate PM<sub>2.5</sub> emissions inventory for contributing/nearby sources to be considered in any NAAQS or PSD Increment modeling.

Background concentrations of  $PM_{2.5}$  are not well established. While Georgia has begun a  $PM_{2.5}$  monitoring campaign, the data may not be accurate enough to use as a background concentration when comparing to the  $PM_{2.5}$  NAAQS.

Georgia's SIP has yet to be amended to include  $PM_{2.5}$ . EPA promulgated its final NSR/PSD implementation rule for  $PM_{2.5}$  in May 2008, but expressly recognized that use of the  $PM_{10}$  Surrogate Policy would be continued until SIP-approved permitting programs revise the SIP to include  $PM_{2.5}$ . The deadline for this revision is May 2011. EPD did not identify any technical prerequisites to application of the  $PM_{10}$  Surrogate Policy. In fact, EPA elected not to finalize a previously proposed option that would have required sources to demonstrate compliance with the  $PM_{2.5}$  NAAQS, because "partially implementing the  $PM_{10}$  Surrogate Policy in this manner would be confusing and difficult to administer."

**P&G COMMENTS**

Comments were received from Jessie Edgar, Site Environmental Leader, by letter on February 5, 2010.

**Comment 1 – Part 3.0, Section 3.1.1 – Additional Emission Units Table, Air Pollution Control Devices Column and Condition 3.3.27**

We are requesting that the deletion of references to 5DE2 and Control Device 5DE2 and 6DE2 and Control Device 6DE2 from this table. Although our permit application assumed controls for demonstrating compliance with the Prevention of Significant Deterioration (PSD) increment consumption limit of 30 micrograms/cubic meter ( $\mu\text{g}/\text{m}^3$ ), we continue to investigate other options for demonstrating compliance with the PSD increment consumption limit. We respectfully request that the permit allow flexibility in demonstrating compliance with the PSD increment consumption limit of 30  $\mu\text{g}/\text{m}^3$  by removing references to the control devices for 5APM and 6APM. P&GPP will submit to the Division a compliance strategy demonstrating compliance with the PSD increment consumption concentration limit of 30  $\mu\text{g}/\text{m}^3$  prior to the commencement of operation of the respective modified paper machine. If control device option is selected for 5APM and/or 6APM as a final PSD increment consumption compliance strategy, P&GPP will also submit to the Division a Compliance Assurance Monitoring (CAM) Plan as required by 40 CFR Part 64.

In addition to the removal of reference to control devices for 5DE2 and 6DE2 from Table 3.1.1, we are proposing the rewording of Condition 3.3.27 as follows:

*3.3.27 For Paper Machines 5APM and 6APM, within 90 days prior to commencement of operation of the respective modified paper machine, the Permittee shall submit to the Division a demonstration of compliance with the Prevention of Significant Deterioration increment concentration of 30 micrograms per cubic meter for  $\text{PM}_{10}$  for the 24-hour averaging period. If the PSD increment consumption demonstration is based on a new control for the modified paper machine, a CAM Plan for the control device shall be submitted within 90 days prior to commencement of operation of the respective modified paper machine.*

**EPD Response:** The changes have been made as requested. The BACT  $\text{PM}_{10}$  limits proposed in this project for Paper Machines 5APM and 6APM, which were established to comply with the 30  $\mu\text{g}/\text{cm}^3$   $\text{PM}_{10}$  increment consumption concentration for the 24-hour averaging period, will not change. In addition, the existing control devices installed on Paper Machines 5APM and 6APM constitute a control strategy that is equivalent to or more effective than the BACT control technology in use by similar sources. Condition 3.3.27 has been modified as follows:

3.3.27 For Paper Machines 5APM and 6APM, within 90 days prior to commencement of operation of the respective modified paper machine, the Permittee shall submit to the Division a demonstration of compliance with the PSD increment concentration of 30 micrograms per cubic meter for  $\text{PM}_{10}$  for the 24-hour averaging period. If the PSD increment consumption demonstration is based on a new control for the modified paper machine, a CAM Plan for the control device shall be submitted within 90 days prior to commencement of operation of the respective modified paper machine.  
[40 CFR 52.21 and 40 CFR Part 64]

**Comment 2 – Section 3.1.1 – Additional Emission Units Table**

This table currently does not include Boiler 3 B003, Converting and Paper Finishing Operations CONV, and Dry Material Handling System X001. Please add these emission units to the table.

**EPD Response:** The changes have been made as requested.

**Comment 3 – Section 3.1.1 – Additional Emission Units Table**

Please remove Emission Units CAS, CBS, and CVS from this table. These sources are no longer owned by P&G. An application request was submitted on June 19, 2009, to have these sources removed from P&G's Title V Permit. The new owner has already been issued Permit No. 3842-095-0096-B-01-0 for these sources.

**EPD Response:** No changes have been made as a result of this comment. These emission units were not included in the Additional Emission Units Table in this Permit Amendment as only the emission units affected by this project were included in the table. However, Emission Units CAS, CBS, and CVS will be removed from P&G's Title V Permit in a subsequent Permit Amendment.

**Comment 4 – Condition 3.3.23**

Please remove reference to low CO burners from this condition to read as:

*3.3.23 Upon completion of the paper machine modification project, Yankee Dryers 1AYD, 2AYD, and 3AYD shall use low NO<sub>x</sub> burners and employ good combustion and work practice measures to minimize NO<sub>x</sub> and CO emissions.*

**EPD Response:** The changes have been made as requested. Condition 3.3.23 has been modified as follows:

3.3.23 Upon completion of the paper machine modification project, the Permittee shall use low NOX burners in Paper Machine Burners 1AYD, 2AYD, and 3AYD along with good combustion and work practice measures to minimize NOX and CO emissions.  
[BACT, 40 CFR 52.21]

**Comment 5 – Condition 3.3.26**

Please modify the leading paragraph of this condition by adding reference to filterable PM/PM<sub>10</sub>. Also remove reference to the Repulper Stack from this and other conditions.

**EPD Response:** The changes have been made as requested. In addition to Condition 3.3.26, the Repulper Stack was also referenced in Conditions 4.2.10 and 4.2.11. For the modified versions of Conditions 4.2.10 and 4.2.11, please see Comments 6 and 7, respectively. Condition 3.3.26 has been modified as follows:

- 3.3.26 Upon completion of the paper machine modification project, the Permittee shall not discharge or cause the discharge into the atmosphere from the stacks of Paper Machines 1APM through 6APM filterable PM/PM<sub>10</sub> in excess of the following when firing any fuel type allowed for both the Predryer and Yankee Burners.

Paper Machine	PM/PM <sub>10</sub> (lbs/hr)
1APM	17.19
2APM	16.72
3APM	19.46
4APM	19.17
5APM	13.89
6APM	15.36

The combined particulate matter emission from the respective Former, Process, Dry End, and Roof Exhauster stacks for each Paper Machine (Emission Unit ID Nos. 1APM, 2APM, 3APM, 4APM, 5APM, 6APM) is subject to the total emission limit for that Paper Machine.

[40 CFR 52.21, 391-3-1-.02(2)(e)(subsumed)]

#### Comment 6 – Condition 4.2.10

For the testing requirements of Part 4.0, P&G respectfully requests that the required PM testing be allowed to be conducted in one to two groups under similar operating conditions or through an alternate approved arrangement as may be necessary in the future to ensure safe and efficient testing. Although the plant currently conducts emission testing simultaneously on all stacks of a paper machine, additional stacks and roof exhaust stacks required to be included in testing of a modified paper machine poses logistical constraints in testing all paper machine stacks simultaneously. We are proposing that Condition 4.2.10 be reworded to read as:

*4.2.10 Within 60 days after achieving the maximum production rate at which the modified paper machine will be operated, but no later than 180 days after initial startup of each modified paper machine, the Permittee shall conduct initial performance tests for PM/PM<sub>10</sub> emissions from the modified paper machine to demonstrate compliance with the respective PM/PM<sub>10</sub> emission limit in Condition 3.3.26. The PM testing shall include all exhaust stacks of the paper machine [Former, Process, Predryer/Yankee Burner, Dry End, and Roof Exhaust Stacks] and shall be conducted such that the exhaust stacks are tested in no more than two groups, under similar operating conditions, and with a gap of no more than two days between the testing of the two groups. An alternate test methodology may be utilized by the Permittee provided the alternate written test protocol is reviewed and approved by the Division prior to the performance testing. Only one Roof Exhaust Stack, as determined by Condition 4.2.12, is required to be included in the performance testing of each modified paper machine.*

**EPD Response:** The proposed changes have not been made. Because the PM/PM<sub>10</sub> limit for each paper machine encompasses the combined emissions from all stacks of that paper machine, the Division requires the emissions from all stacks on the paper machine be tested simultaneously to determine compliance with the PM/PM<sub>10</sub> limit. However, this condition has been modified to clarify that only the modified paper machine must be tested during each performance test and to remove reference to the Repulper Stack. Condition 4.2.10 has been modified as follows:

- 4.2.10 For Paper Machines 1APM through 6APM, the Permittee shall conduct initial performance tests for PM/PM<sub>10</sub> emissions from the modified paper machine to determine compliance with the respective PM/PM<sub>10</sub> emission limits in Condition 3.3.26. The performance testing on each modified paper machine shall be conducted within 60 days after achieving the maximum production rate at which the modified paper machine will be operated, but no later than 180 days after initial startup of the modified paper machine. The Permittee shall conduct PM/PM<sub>10</sub> emissions testing simultaneously on all exhaust stacks installed on each paper machine [Former, Process, Predryer/Yankee Burner, Dry End and Roof Exhaust Stacks]. The Permittee shall only conduct testing on one Roof Exhaust Stack for each paper machine as determined by the methods to estimate emissions from Roof Exhaust Stacks in Condition 4.2.12.  
[40 CFR 52.21]

#### **Comment 7 – Condition 4.2.11**

Similar to the proposed initial testing in two groups of the paper machine stacks for Condition 4.2.10 (see Comment 6), we are proposing that Condition 4.2.11 be reworded to read as:

- 4.2.11 *The Permittee shall conduct periodic performance testing for PM/PM<sub>10</sub> emissions from Paper Machine 1APM through 6APM in accordance with Condition 4.2.1. The PM emission testing shall include all exhaust stacks of the paper machine [Former, Process, Predryer/Yankee Burner, Dry End, and Roof Exhaust Stacks] and shall be conducted such that the exhaust stacks are tested in no more than two groups, under similar operating conditions, and with a gap of no more than two days between the testing of the two groups. An alternate test methodology may be utilized by the Permittee provided that alternate written test protocol is reviewed and approved by the Division prior to the performance testing. Only one Roof Exhaust Stack, as determined by Condition 4.2.12, is required to be included in the performance testing of each modified paper machine.*

**EPD Response:** The proposed changes have not been made. As stated in response to Comment 6, because the PM/PM<sub>10</sub> limit for each paper machine encompasses the combined emissions from all stacks of that paper machine, the Division requires the emissions from all stacks on the paper machine be tested simultaneously to determine compliance with the PM/PM<sub>10</sub> limit. However, this condition has been modified for clarity and to remove reference to the Repulper Stack. Condition 4.2.11 has been modified as follows:

- 4.2.11 Following the performance testing required by Condition 4.2.10, the Permittee shall conduct periodic performance testing for PM/PM<sub>10</sub> emissions from Paper Machine 1APM through 6APM in accordance with the schedule in Condition 4.2.1. The Permittee shall conduct the PM/PM<sub>10</sub> emission testing simultaneously on all exhaust stacks installed on a paper machine [Former, Process, Predryer/Yankee Burner, Dry End, and Roof Exhaust Stacks]. The Permittee shall only conduct testing on one Roof Exhaust Stack for each paper machine as determined by the methods to estimate emissions from Roof Exhaust Stacks in Condition 4.2.12.  
[391-3-1-.02(6)(b)1]



**Comment 8 – Condition 4.2.12**

We are requesting that Condition 4.2.12 be reworded to read as:

*4.2.12 The Permittee shall conduct initial performance tests for PM/PM<sub>10</sub> emissions from the Roof Exhaust Stacks on two paper machines. One paper machine tested shall be either 1APM or 2APM and the second paper machine tested shall be on machine from 3APM, 4APM, 5APM, or 6APM, unless otherwise specified in alternate test procedures approved by the Division. All Roof Exhaust Stacks on each paper machine shall be tested at the same time. The performance testing must be conducted within 60 days after achieving the maximum production rate at which the first modified paper machine will be operated, but no later than 180 days after the initial startup of the first modified paper machine 1APM or 2APM and first machine from the machine group 3APM, 4APM, 5APM, and 6APM. The Permittee shall use the test results to select the single roof exhauster to be included in testing required by Conditions 4.2.10 and 4.2.11.*

**EPD Response:** As a result of this Comment, Condition 4.2.12 has been modified as follows:

4.2.12 The Permittee shall conduct performance tests for PM/PM<sub>10</sub> emissions from the Roof Exhaust Stacks on two paper machines. One paper machine tested shall be either 1APM or 2APM, and the second paper machine tested shall be one of line 3APM, 4APM, 5APM, or 6APM, unless otherwise specified in alternate test procedures approved by the Division. Each performance test must be conducted within 60 days after achieving the maximum production rate at which the chosen paper machine will be operated, but no later than 180 days after the initial startup of the chosen paper machine. All Roof Exhaust Stacks on each paper machine shall be tested at the same time. The Permittee shall use the test results to develop procedures to represent emissions from all Roof Exhaust Stacks by testing a single Roof Exhaust Stack on a respective paper machine. The procedures to estimate emissions shall be used in accordance with Conditions 4.2.10 and 4.2.11.  
[391-3-1-.02(6)(b)1]

**Comment 9 – Attachment B, Insignificant Activities Checklist, Combustion Equipment, Item 1 – Fire Fighting Equipment**

Please change the quantity from 1 to 2.

**EPD Response:** The changes have been made as requested.

**Comment 10 – Attachment B, Insignificant Activities Based on Emission Levels**

Please delete Paper Making Roof Exhausters with quantity 24 from this table. The roof exhausters are now part of the paper machine emission units

**EPD Response:** The changes have been made as requested.

**Comment 11 – Attachment B, Generic Emission Groups, Fuel Burning Equipment**

Please change the quantity for “Fuel burning equipment with a rated heat input capacity of less than 5 million Btu/hr, burning only distillate fuel oil, natural gas, and/or LPG” from 17 to 23.

**EPD Response:** The changes have been made as requested.

### **EPD CHANGES**

#### **Change 1 – Naming of Yankee Burners**

In the Draft Amendment, emission units 1AYD through 6AYD are referenced as Yankee Burners in Table 3.1.1 – Additional Emission Units and as Yankee Burners, Yankee Dryers, and Paper Machine Burners in the conditions. For consistency, references to emission units 1AYD through 6AYD have been changed to Yankee Burners in the description of the modification on the cover page, in Section 1.3, and in Conditions 3.3.21, 3.3.22, 3.3.23, 4.2.13, 4.2.14, 5.2.11, 5.2.12, and 6.1.7.b.x. References to Paper Machine Burners that include both Yankee and Predryer Burners were not changed.

#### **Change 2 – Emission Unit Descriptions in Table 3.1.1**

In the Draft Permit, the descriptions of Paper Machines 5APM and 6APM in Table 3.1.1 incorrectly listed 2 Dry End Stacks for each paper machine. However, after the modifications, each paper machine will have 3 Dry End Stacks. Therefore, the descriptions for Paper Machines 5APM and 6APM in Table 3.1.1 have been modified as follows:

5APM	5A Paper Machine (Former, Process and 3 Dry End stacks)	40 CFR 52.21, 391-3-1-.02(2)(b), 391-3-1-.02(2)(e), 40 CFR 63, Subpart A, 40 CFR 63, Subpart JJJJ, <u>40 CFR 64</u>	3.3.5, 3.3.7, 3.3.8, 3.3.9, 3.3.12, 3.3.13, 3.3.14, 3.3.15, 3.3.16, 3.3.24, 3.3.26, 3.3.27, 3.5.4, 4.2.1, 4.2.6, 4.2.10, 4.2.11, 5.2.2, 5.2.5, 5.2.10, 6.1.7, 6.2.1, 6.2.6, 6.2.7, 6.2.8, 6.2.9, 6.2.10, 6.2.11, 6.2.12, 6.2.13	5ACS, 5AVS	Cyclonic Separator, Venturi Scrubber
6APM	6A Paper Machine (Former, Process and 3 Dry End Stacks)	40 CFR 52.21, 391-3-1-.02(2)(b), 391-3-1-.02(2)(e), 40 CFR 63 Subpart A, 40 CFR 63 Subpart JJJJ, <u>40 CFR 64</u>	3.3.5, 3.3.7, 3.3.8, 3.3.9, 3.3.12, 3.3.13, 3.3.14, 3.3.15, 3.3.16, 3.3.24, 3.3.26, 3.3.27, 3.5.4, 4.2.1, 4.2.6, 4.2.10, 4.2.11, 5.2.2, 5.2.5, 5.2.10, 6.1.7, 6.2.1, 6.2.6, 6.2.7, 6.2.8, 6.2.9, 6.2.10, 6.2.11, 6.2.12, 6.2.13	6ACS, 6AVS	Cyclonic Separator, Venturi Scrubber

#### **Change 3 – Numbering Change of Condition 3.2.21 to Condition 3.3.21**

Due to a typo, Condition 3.2.21 in the Draft Amendment was incorrectly numbered and has been renumbered as Condition 3.3.21.

# **APPENDIX A**

## **AIR QUALITY PERMIT**

**Amendment No. 2676-095-0071-V-02-1**

## **APPENDIX B**

### **WRITTEN COMMENTS RECEIVED DURING COMMENT PERIOD**