Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

August 17, 2006

CERTIFIED MAIL – Return Receipt Requested

Mr. Keith Wahoske
Vice President – Palatka Operations
Georgia-Pacific
Palatka Mill
P.O. Box 919
Palatka, Florida 32178-0919

RE: Modification to the Nos. 4 Combination Boiler, Lime Kiln and Recovery Boiler
Project No.: 1070005-038-AC/PSD-FL-380

Dear Mr. Wahoske:

On July 18, 2006, the Department received a request to modify the Nos. 4 Combination Boiler, Lime Kiln and Recovery Boiler. Based on our review of the proposed project, we have determined that the following additional information is needed in order to continue processing this application package. Please provide all assumptions, calculations, and reference material(s), that are used or reflected in any of your responses to the following issues:

No. 4 Combination Boiler (CB).

1. In Attachment GP-EU1-F1.8, specifically in Section 1.A., LVHC NCGs, a claim of "at least 60%" sulfur removal efficiency in the pre-scrubber is made. How was this minimum efficiency established? Do you have any performance tests/documentation to support this claim? Please provide any test reports/documentation to support this efficiency removal claim.

2. In Attachment GP-EU1-F1.8, specifically Sections 1.A, B. and D., provide documentation of the emission factors used, i.e., 378 lbs S/hr loading from the LVHC gas stream, 162 lbs S/hr from the SOG stream and 0.35 lbs S/hr from the DNCG stream, respectively.

3. In Attachment GP-EU1-F1.8, specifically Section 2, Maximum 24-hr SO_2 Emission Rate, what is the basis of the 2300 TPD ADUP pulp production rate used in the calculations? Has this level of production ever been achieved? If not, then identify equipment changes/modifications and/or replacements will have to be made in order to achieve this level of operation?

4. During a loss of bark feed and a switch to 100% fuel oil firing, do you plan, as a method of operation, to burn the DNCGs, NCGs and SOGs in the CB, or will they routed to the No. 5 Power Boiler (No. 5 PB) or some other emissions unit for destruction? Please explain and adjust any calculations that is/are appropriate.

5. For the annual SO_2 emissions calculations in Attachment GP-EU1-F1.8, what is the basis for the "20% utilization of the CB for the destruction of NCGs, SOGs and DNCGs"? Please explain and provide justification. Adjust any calculations that is/are appropriate. When in this mode, how are you demonstrating compliance with the TRS limit?

6. Is the thermal oxidizer, which is the primary destruction device for NCGs and SOGs, down 20% of the operational year? If so, please explain. In addition, provide the hours of operation and downtime for the thermal oxidizer for the last five years.

7. While the thermal oxidizer is operating, have you ever routed the NCGs and SOGs to the CB or another emissions unit for destruction? If yes, please explain.

8. When the CB is used as a backup control device for NCGs, SOGs, and DNCGs, how is compliance demonstrated? For the years that the CB has been used as a backup control device for the thermal incineration system, provide the number of hours of operation in this backup control mode and the percent of total operation of the CB in this backup control mode. Is the CB also the primary control device for DNCGs (see Page 2-8)? When the CB is used as the control device for NCGs, SOGs, and DNCGs, do the controlled emission levels comply with the NESHAP, 40 CFR 63, Subpart S?

9. Based on the exceptions listed in the PSD Report, Section 2.3.1., Past Actual Emissions, have you submitted a correction to the 2004 and 2005 AORs?

10. The Bark Hog project used a heating value for wet as-fired bark of 4500 Btu/lb. Yet for this project, the value of 4750 Btu/lb, wet and as-fired is being used. The permitted capacity of Btu/hr heat input to the CB was limited to 512.7 MMBtu/hr, based on "57 tons per hour carbonaceous fuel (bark/wood chips) with an average heating value of 4500 Btu/lb on a wet, as-fired basis". In this application, the requested heat input is 564 MMBtu/hr based on "59.4 TPH tons per hour carbonaceous fuel (bark/wood chips) with an average heating value of 4750 Btu/lb on a wet, as-fired basis". Please explain why you used a different heating value for the same material. Also, resubmit corrected pages as appropriate.

11. According to the application, the current permitted maximum heat input rate to the CB is 512.7 MMBtu/hour based on a 24-hour average. Based on a wood/bark heating value of 4750, this is equivalent to a maximum of 54 TPH and 1296 TPD of wood/bark firing. The application requests a maximum annual heat input rate of 4,042,127 MMBtu during any consecutive 12 months. The proposed physical changes (upgraded bark/wood delivery system, new air swept bark/wood feeders, new OFA system and modified combustion air supply, modified underfire air distribution, upgraded ash removal system, etc.) will allow the existing CB to achieve the above maximum heat input rates and wood/bark firing rates. Is this accurate?

12. For CO, NOx, SO_2, and VOC emissions: provide any emissions test data available for the CB; and, provide any emission test data available for other G-P boilers similar to the CB at the Palatka Mill.

13. See Attachment GP-EU1-I1, which is a process flow diagram for the CB.

a. This chart shows ash from the new mechanical dust collector being directed back to the CB and not the ash sluice tanks. Please explain.

b. This chart shows the exhaust from the CB directed to the new mechanical dust collector and then being split between the existing ESP for the CB and the existing ESP for the No. 5 PB. The application later indicates that the ESPs for the CB the No. 5 PB will be refurbished. The ESP for the No. 5 PB may be used as the 4^{th}, 5^{th} and 6^{th} fields for the exhaust from the CB. If this happens, a new ESP will be installed for the No. 5 PB. In other words, the exhaust streams will never mix and there will only be one stack. Is this accurate? Provide additional details of the proposed configuration, cost of the proposed ESP work for the CB, cost of the proposed ESP work for the No. 5 PB (including new field), cost of the connecting ductwork, and the cost of a proposed new ESP for the No. 5 PB.

c. The Department is aware the G-P has filed a separate minor source air construction permit with the NED Office to install a new field on the No. 5 PB. The system is being designed for a much larger flue gas flow rate than is needed for the No. 5 PB. Has G-P made the decision to use the refurbished ESP for the No. 5 PB to control emissions from the CB? Isn't this project related to the PSD application for the CB? Please explain.

14. See Attachment GP-EU1-I3, which provides control equipment details for the CB.
    - o Details for the new mechanical dust collector indicate a maximum inlet flow rate of 280,000 acfm @ 700° F.
    - o Details for the refurbished ESP for the CB indicate a maximum inlet flow rate of 455,000 acfm @ 325° F.

    a. Is additional air being provided to cool the exhaust prior to the ESP?

    b. Identify the dscfm of exhaust from the CB, the dscfm of cooling air, and the total dscfm to the ESP.

    c. What is the design temperature for the ESP?

    d. Are new fans being installed to achieve this cooling and exhaust rate?

15. Why weren't past actual PM emissions simply based on previous stack test data? Does the boiler typically fire oil with wood/bark? At what rate? Are assumed control efficiencies reasonable based on the existing cyclone/ESP control system installed for this unit?

16. The application indicates that the current PM standard is 0.3 lb/MMBtu and requests a BACT limit of 0.04 lb/MMBtu. NESHAP DDDDD provisions establish a PM standard of 0.025 lb/MMBtu for new solid fuel-fired boilers. Table 5-1 of the application lists the PM/PM_{10} BACT determination for 34 recent projects for biomass-fired boilers. Of these, 17 projects have BACT determinations of 0.03 lb/MMBtu or less. Explain why the additional improvements described for the ESP(s) would not be able to achieve such a level of emissions for the CB.

17. The application indicates that new low-NOx burners (LNBs) will be installed to fire No. 6 fuel oil (2.35% sulfur content, by weight, max.). These burners will replace the same number of existing oil burners, will have the same heat input rate, will achieve a NOx emission standard of 0.27 lb/MMBtu, and will be restricted to firing no more than 5,100,000 gallons during any consecutive 12 months. The application also indicates that there are 6 oil guns. How many total oil burners are there? What is the generally acceptable range of NOx emissions for a burner to be considered a "low-NOx" burner? Provide the vendor specifications for both the CO and NOx emissions from the proposed new burners. Please explain the use of the "0.164" factor when estimating SO_2 emissions from oil firing. Is this a reasonable estimate of SO_2 emission from oil firing?

18. Describe the new equipment, controls, and improvements to the overfire air (OFA) system for the CB. Has (or will) computational fluid dynamic modeling be conducted to aid in the design of the OFA? Provide any vendor specifications available regarding emission levels before and after installation of the new OFA.

19. Does the CB currently have flue gas recirculation (FGR)? What is the maximum designed percent of FGR? Does the boiler operate at this rate? When was it installed?

20. As stated in the application, SNCR for several Florida biomass-fired boilers have achieved levels of up to 50% NOx reduction. Provide a revised cost effectiveness analysis assuming this level of control. Provide details for this specific boiler that causes problems related to an SNCR system and high control efficiencies.

21. Page 3-12 of the application states that NSPS Subpart Db could apply to the project to modify an oil and wood-fired boiler if there was an hourly increase in emissions. The conclusion is that this subpart does not apply because PM emissions will actually decrease for this unit. Provide a similar discussion for SO_2 and NOx emissions, which are also regulated by this subpart. Please correlate the discussion with that provided on Page 3-13 regarding SO_2 and NOx emissions.

22. Is the existing No. 4 Power Boiler currently shutdown? What is the date of last operation for this unit? Is this unit currently able to operate in its current condition? When will construction begin on the proposed PSD project?

23. In the section labeled "PSD Report", specifically page 2-7, next-to-last paragraph, you indicated that the No. 5 PB's modified ESP "may" be used by the CB's operation for additional control of particulate emissions. Based on this, please respond to the following issues:

a. Please describe what "may" means.

b. Are you planning to use the No. 5 PB's modified ESP to control particulate emissions from the CB's operation on a permanent basis? If not, please explain.

c. Which stack will be used on a permanent basis...the CB's or the No. 5 PB's....when the No. 5 PB's modified ESP is being utilized?

d. Since the No. 5 PB and its mass emissions will be impacted by the CB project, have the emissions of all affected pollutants been included in the modeling for the CB project, which includes the Nos. 4 RB and LK projects? Did you assess the potential impact of all of the pollutant emissions exiting the No. 5 PB's modified ESP and its associated stack?

e. What is the resultant flue gas volumetric flow rate in "dscfm @ 10% O_2" when the No. 5 PB's modified ESP is being utilized by the CB's operation?

f. List and describe all of the "methods of operation" for which the No. 5 PB's modified ESP will be used by the CB's operation, and this listing should include all of the fuels (100% fuel oil to percentages of fuel oil and bark) used by the No. 5 PB and the CB.

g. Regarding the No. 5 PB's modified ESP as an extended control device of the CB's operation, what is the expected control efficiency for each pollutant? Provide all assumptions and calculations.

h. Will the pollutant emissions of the No. 5 PB's modified ESP increase due to this project?

i. Will the inlet loading to the No. 5 PB's modified ESP increase due to this project?

j. Will there be an increase in the flue gas volumetric flow rate through the No. 5 PB's modified ESP due to this project? If so, please provide the assumptions and calculations for the potential pollutant emissions due to this increase in flow rate.

k. For the PB, what is the volumetric flow rate of the modified ESP in "dscfm @ 10% O_2"? Based on the RAI response letter to the Northeast District dated June 29, 2006, regarding an application to modify the No. 5 PB's existing ESP, the design flow rate for the No. 5 PB's modified ESP was stated as 455,000 acfm. Since the original design flow rate was 231,500 acfm, and your response in Response #3 was that there will be no change to the existing ESP's fans, ducts, etc., then please explain how the modified ESP's flow rate will be 455,000 acfm without some fan and/or physical modification? Please provide any assumptions and calculations.

l. Since the CB's TRS allowable limit is 5 ppmvd @ 10% O_2, the current potential mass emissions of 3.6 lbs/hr and 15.7 TPY are based on a volumetric flow rate of 135,400 dscfm. Unless the No. 5 PB's volumetric flow rate, in "dscfm @ 10% O_2", is the same as the existing CB's dscfm flow rate, then the potential mass emissions of TRS will be increased when utilizing the No. 5 PB's modified ESP and appears to implicate that the net TRS mass emissions will be greater than significant and, therefore, subject to PSD NSR preconstruction review and BACT. If so, please submit the appropriate material and determination related to this.

m. In the PCP project for the burning of SOGs, NCGs and DNCGs, were the resultant SO_2 emissions evaluated exiting the Thermal Oxidizer and its backup, the CB? Based on the current proposal, this evaluation should be conducted if the No. 5 PB's modified ESP is going to be utilized by the CB's operations and SOGs, NCGs and DNCGs are being incinerated in the CB. If this was not done, please do so to provide reasonable assurance that there is no NAAQS nor increment violations.

n. It appears that the No. 5 PB's ESP modification and the recent application submittal for modifications to the Nos. 4 CB, RB and LK are related, i.e., the No. 5 PB's modified ESP will become a particulate control device for the CB's operation. As such, why wasn't the No. 5 PB's ESP modification and any appropriate changes, including impacts, modeling and potentially BACT, included in this project?

24. In the netting table, why did you not include any past and future TRS mass emissions from the CB, since it is the back-up control device for SOGs and NCGs and the primary control device for DNCGs, and it has an allowable emissions limit of 5 ppmvd @ 10% O_2? It should at least include the "20% utilization factor" requested and depicted in Attachment GP-EU1-F1.8. Was the CB used during CY 2004 and 2005 for the incineration of these gases? Provide the dates and amount of time it was utilized for this purpose during these years and make the calculations and appropriate adjustments to the netting table, Table 1, Past Actuals. Also, see Issue No. 5, above.

25. In the application, Section H. Continuous Monitor Information, there was no pages completed, yet the requirements for continuous emissions monitoring of TRS emissions pursuant to Rule 62-296.404(3)(f) and (5)(c), F.A.C., are applicable. Have you installed the devices to continuously monitor temperature at the point of combustion and oxygen pursuant to the requirements? If not, please explain. If so, please complete the appropriate application pages and submit.

26. In Attachment GP-EU1-I3, Detailed Description of Control Equipment, specifically for the No. 5 PB's ESP, the control efficiency is listed as 99.5% for particulate matter. Is this accurate? If not, please explain, correct and resubmit the document.

27. Please identify any other emissions units/activities that will be affected upstream and downstream by the increase in production and steam output due to the proposed modification of the CB. If any, please include in the analysis any increases in production and associated pollutant emissions, including any collateral emission changes and increases (NCG's TRS to SO_2, etc.) for these emissions units/activities.

No. 4 Lime Kiln (LK).

28. For the LK, provide the actual venturi scrubber pressure differential for each of the particulate matter emissions tests provided with the application (1995 – 2005).

29. The proposed BACT emissions standards in Table E-7 do not reflect the proposed BACT standards in the DEP application form nor the annual emissions used in the netting analysis. Please revise accordingly.

No. 4 Recovery Boiler (RB).

30. For the RB, the application proposes the following CO limits: 800 ppmvd @ 8% oxygen (3-hour average) and 400 ppmvd @ 8% oxygen (24-hour average). The application also reflects G-P's agreement to install a CO CEMS. Please verify the averaging periods.

31. For the RB, provide a discussion on the fraction of PM_{10} emissions of the PM emissions. This appears different than previous submittals.

Nos. 4 LK, RB and Smelt Dissolving Tank.

32. For all applicable units, please verify that past actual emissions for TRS and SO_2 were based on CEMS data and not test data. Please revise the calculation pages and the netting table appropriately.

Miscellaneous.

33. Where is the No. 5 PB located on the facility plot plan?

34. Due to the recent changes made regarding the Primary Responsible Official and Authorized Representative at the Georgia-Pacific's Palatka Mill, please have Mr. Wahoske sign, date and submit a completed application's "Owner/Authorized Representative Statement" page for each of the submitted applications, one for the CB and one for the combined LK and RB.

35. The Department did not receive the results of the SO_2 air dispersion modeling mentioned on page 4-2 of the RB's and LK's application. This modeling should include not only mill-wide SO_2 emissions due to the mill operating at the projected highest short-term limits, but all applicable nearby sources, and should include predicted impacts in both the PSD Class I and Class II areas. This modeling is required by Rule 62-212.300(1), F.A.C.

36. In Section 2.6.4 on page C-7 of the RB's and LK's application, the maximum receptor distance for the significant impact analyses is given as 4 km. Please provide the justification for this distance.

37. If the responses to any of the Department's comments above change the pollutant emission rates or stack configurations, these changes should be evaluated by the appropriate air dispersion modeling and the results provided to the Department.

38. Please provide a facility plot plan in AUTOCAD format, which shows the location of all stacks, buildings, fence lines and roads. This plot plan should have a scale and be in UTM coordinates.

39. If any response to the above issues affect the application submittal, please correct and/or change the application to reflect the additional analyses and submit.

Any additional comments from EPA and the U.S. Fish and Wildlife Service will be forwarded to you after we receive them. The Department will resume processing this application after receipt of the requested information. If you have any questions regarding this matter, please call Bruce Mitchell at (850)413-9198 or Cleve Holladay at (850)921-8986.

Sincerely,

Jeffrey F. Koerner, P.E.
Permitting North Administrator
Bureau of Air Regulation

JFK/bm

cc: Gregg Worley, U.S. EPA, Region 4
John Bunyak, NPS
David Buff, P.E., GAI
Chris Kirts, NED
Myra J. Carpenter, G-PC

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1. Article Addressed to:

Mr. Keith Wahoske, Vice President
Palatka Operations
Georgia-Pacific
Palatka Mill
Post Office Box 919
Palatka, Florida 32178-0919

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