

Adams, Patty

From: Koerner, Jeff
Sent: Friday, December 15, 2006 4:45 PM
To: Mitchell, Bruce; Adams, Patty
Subject: FW: Project No. 1070005-038-AC/PSD-FL-380, Request for Additional Information

Attachments: 1070005-038-AC - RFI 3.pdf

From: Koerner, Jeff
Sent: Friday, December 15, 2006 4:43 PM
To: 'keith.wahoske@gapac.com'; Michael W. Curtis (Michael.Curtis@gapac.com); David Buff (dave_buff@golder.com)
Cc: Kirts, Christopher; Gregg Worley (worley.gregg@epamail.epa.gov); Dee Morse (dee_morse@nps.gov)
Subject: Project No. 1070005-038-AC/PSD-FL-380, Request for Additional Information

Georgia-Pacific Corporation Modification of the No. 4 Recovery Boiler, No. 4 Lime Kiln and No. 4 Combination Boiler

Gentlemen:

As we discussed earlier this week, I am providing the attached request for additional information. Please contact me if you have any questions.

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you.

Jeff Koerner, Air Permitting North
Bureau of Air Regulation
Florida Department of Environmental Protection
850/921-9536



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RFI 3.pdf (73...



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

December 15, 2006

{Sent by Electronic Mail - Return Receipt Requested}

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

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

Dear Mr. Wahoske:

On November 16th, the Department received your response to our request for additional information regarding this project. In addition, we received related facsimiles on November 22nd (regarding the No. 4 Combination Boiler and the No. 5 Power Boiler) and on November 30th (regarding the No. 4 Recovery Boiler). Based on our review of this information, the application remains incomplete. In order to continue processing your application, the Department will need the additional information requested below. Should your response to any of the items below require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

Sulfuric Acid Mist (SAM) Emissions

1. The project is significant for sulfuric acid mist emissions and requires a BACT determination. SAM emissions from the No. 4 Lime Kiln result from firing residual oil; however, overall emissions are very low (estimated < 2 tons/year) due to the natural scrubbing action of the lime kiln and possible additional reductions in the venturi scrubber. For the No. 4 Combination Boiler, the control technology review indicates the following technologies are available for the control for SAM emissions: dry ESPs, wet ESPs, and wet scrubbers. Your control technology review for the No. 4 Recovery Boiler also indicates mist eliminators in addition to this equipment. Dry ESPs, wet ESPs, wet scrubbers were eliminated from consideration due to expected high capital costs. Mist eliminators were eliminated from consideration because no actual installations were identified that reduced SAM emissions with mist eliminators on a recovery boiler. However, this technology appears transferable. Please provide a cost effectiveness analysis for adding mist eliminators to the No. 4 Recovery Boiler and the No. 4 Combination Boiler.

As stated in the application for the No. 4 Recovery Boiler, reducing SO₂ emissions will also result in lower SAM emissions. For this reason, the Department will consider reducing the fuel sulfur content of the residual oil in making its BACT determination. Please provide a control technology review for lowering the fuel sulfur content of the residual oil currently being fired to include a cost effectiveness analysis.

Alternatively, provide a combination of fuel consumption/fuel sulfur limits that maintain the net emissions increases below the PSD significant emissions rate for SAM emissions (7 tons/year). Depending on future use, this may be readily achievable because the primary fuels are BLS for the No. 4 Recovery Boiler and bark/wood for the No. 4 Combination Boiler. In fact, the stated purpose of the modifications to the No. 4 Combination Boiler is to more efficiently combust bark/wood and to displace oil firing.

No. 4 Recovery Boiler

2. On November 30th, we received a graph by facsimile labeled "Recovery Boiler 12 Hr. Startup Curve". The graph plots steam pressure (psi) versus time (hours). A statement following the graph indicates that "... it is also a normal startup curve that has been doubled to accommodate an extended boiler outage." Please provide the original graph for a

CC: [Redacted]

REQUEST FOR ADDITIONAL INFORMATION

normal startup and identify the conditions for a normal startup. Also, please identify the conditions of a startup after an extended outage and explain the rationale for "doubling" the original graph.

No. 4 Combination Boiler

3. Prior to our previous request for additional information, representatives from the Bureau of Air Regulation met with representatives from Georgia-Pacific on October 26th. At the meeting, Georgia-Pacific indicated plans to revise the application to show that the modifications to the No. 4 Combination Boiler would not result in any emissions increases over baseline emissions except for CO emissions. Your response did not include such a revision. Please verify that you no longer have such plans to revise the application.
4. Your first response to our request for additional information (Item #14) identified the design flow as 230,000 acfm. Item #15 of that response also identified corrected flow rate as 135,400 dscfm @ 10% O₂, which was used to calculate the TRS emissions (page 7 of 7 of the application, "Total Reduced Sulfur, Potential Emissions"). Your second response to our request for additional information (Item #3) identifies the preliminary design flow rate as 317,000 acfm. It appears that the flow rate has changed. Please verify design flow rate from the No. 4 Combination Boiler in "acfm" and the corresponding flow rate in "dscfm @ 10% O₂". As necessary, recalculate the potential TRS mass emissions rates and update the applicable application pages.
5. Based on your submittals, the Department believes several of the identified NO_x control options are likely cost effective including: selective non-catalytic reduction (SNCR), the Ecotube system with urea injection, and flue gas recirculation (FGR). These controls have been successfully installed on similar units. The Department's review focused on the SNCR system, which has been successfully installed and operated on several units in Florida including RDF boilers, wood-fired boilers, and bagasse-fired boilers. However, both the Ecotube with urea injection and flue gas recirculation (FGR) may also be able to provide similar reductions with comparable costs.

SNCR: The preliminary SNCR design was based on the co-firing of residual oil with a maximum fuel sulfur content of 2.5% by weight. When the fuel sulfur content is above approximately 1.5% by weight, the vendor indicates that a critical design constraint is to substantially limit the ammonia slip to prevent the formation of ammonium bisulfates, which can foul boiler heat transfer surfaces. With regard to the SNCR design, this will likely result in more injectors, additional injector levels, restricted urea injection rates, and reduced control efficiencies. Although the vendor indicated a reduction of 35% in the bid for the primary fuel scenario (bark/oil), the cost effectiveness estimate was based upon only 30% reduction. Existing biomass-fired boilers are achieving control efficiencies of up to 50% reduction. Will the No. 4 Combination Boiler fire bark/wood alone without other fuels? Please provide a vendor quote on equipment and installation costs for an SNCR system firing bark/wood alone and firing bark/wood with oil having a maximum fuel sulfur content of less than 1.0%. Please include the input criteria for the bid, the expected control efficiencies, and the urea injection rate.

Ecotube Plus Urea Injection: The estimated cost effectiveness for this system is actually lower than that estimated for SNCR. In addition, the vendor indicates co-benefits for reducing CO emissions, which is also subject to a BACT determination for this project. Please provide the vendor quote used for the Ecotube system with/without urea injection including the input criteria, estimated installation costs, control efficiencies, and urea injection rate.

FGR: When combined with air staging, flue gas recirculation (FGR) has achieved control efficiencies approaching 50% reduction for similar units depending on initial uncontrolled NO_x emissions rates. Please provide the vendor quote for the FGR system including the input criteria, estimated installation costs, and control efficiency.

Provide a revised cost effectiveness analysis (\$/ton NO_x removed) for each of these controls options and identify the most cost effective option.

The project identifies the following physical modifications to the No. 4 Combination Boiler: modified conveyors; new air swept bark distributors; a new overfire air (OFA) system; new low-NO_x burners (LNB); and possibly new baffles to more evenly distribute the underfire air. The primary purpose for these modifications is to improve combustion of the bark/wood fuel and the overall burning rate of this fuel to reduce oil firing. Such changes will affect pollutant emissions, which could affect the design of the control systems. For the selected NO_x control option, provide a schedule and comments regarding the following: commencement through completion of the boiler modifications; boiler shakedown; performance and emissions testing after completing the boiler modifications; development and final design of the NO_x control system; commencement through completion of installing the NO_x control system; initial startup and shakedown after completing the NO_x control system; equipment shakedown and tuning; initial compliance testing; and monitor certification.

REQUEST FOR ADDITIONAL INFORMATION

No. 5 Power Boiler

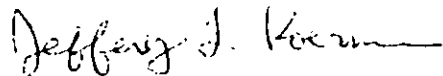
6. Based on your last submittal, a new ESP will be installed on the No. 5 Power Boiler. No vendor has yet been selected. As you are aware, the No. 5 Power Boiler has been identified as a "BART-eligible" unit. Please ensure that this new control equipment will be designed and selected in accordance with this upcoming regulatory requirement.

Miscellaneous

7. The Department is aware of your upcoming spring outage and a stated critical need to implement the modifications for the No. 4 Recovery Boiler and the No. 4 Lime Kiln during this period. The Department believes that this portion of the application is nearly complete. In addition, the Department also believes that the combined netting analysis properly identifies the PSD-significant pollutants for the projects and that the requirements for the air quality analysis have been satisfied. If requested, the Department is now willing to separate the project into two related PSD applications: (1) the No. 4 Recovery Boiler and No. 4 Lime Kiln, and (2) the No. 4 Combination Boiler. Please keep in mind that each related project remains subject to the same PSD-significant pollutants, air quality modeling requirements, etc.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information. If you have any questions regarding this request, please call Bruce Mitchell at 850/413-9198 or me at 850/921-9536.

Sincerely,



Jeffery F. Koerner, Air Permitting North Section
Bureau of Air Regulation

TLV/jfk/bm

cc: Mr. Keith Wahoske, Georgia-Pacific (keith.wahoske@gapac.com)
Mr. Mike Curtis, Georgia-Pacific (michael.curtis@gapac.com)
Mr. David Buff, Golder Associates Inc. (dave_buff@golder.com)
Mr. Chris Kirts, NED Office (kirts_c@dep.state.fl.us)
Mr. Gregg Worley, U.S. EPA, Region 4 (worley.gregg@epamail.epa.gov)
Mr. Dee Morse, NPS (dee_morse@nps.gov)