Georgia Department of Natural Resources
Environmental Protection Division • Air Protection Branch
4244 International Parkway • Suite 120 • Atlanta • Georgia 30354
404/363-7000 • Fax: 404/363-7100
Noel Holcomb, Commissioner
Carol A. Couch, Ph.D., Director

NOV 1 2 2008

Mr. Mark S. Sajer
Managing Director
Summit Energy Partners, LLC
99 Summit Avenue, Suite 2C
Summit, New Jersey 07901

Re: PSD Application No. 17700 dated September 27, 2007
Yellow Pine Energy Company, LLC (Yellow Pine) Fort Gaines, Georgia (Clay County)
AIRS No. 06100001

Dear Mr. Sajer:

The purpose of this letter is to follow up on your October 31, 2008 meeting with Jim Ussery, EPD Assistant Director, and Chuck Mueller, Acting Branch Chief of the Air Protection Branch.

Supplemental Fuels - Coal and Pet. Coke

It is our understanding that you have withdrawn your request to burn bituminous coal and/or petroleum coke (Pet. Coke) at the facility. Therefore, those fuels are no longer under consideration in our review of the application.

Supplemental Fuels - Tire Derived Fuel (TDF)

In our June 17, 2008 letter, we asked for TDF specifications from one of your likely TDF suppliers. In your response, you were unable to provide the specifications because the type of TDF you would need was not currently available[1]. Specifically, you stated, "Although Yellow Pine hopes vendors will modify their product to supply 95% metal-free TDF variety, no assurances can be given that this refined type of TDF will be commercially available on economic terms and in volumes needed by Yellow Pine in the future." Based on this response, as well as the lack of demonstrated need for supplemental fuels in general, EPD does believe it is appropriate to move forward with proposed BACT and MACT emission limits when burning TDF. We are considering authorizing a trial burn of TDF in the permit that would allow us to see the impact on emissions and for you to see if the TDF would be advantageous from an operational standpoint.

NOx BACT

We have recently spoken with representatives from some of the leading biomass boiler manufacturers in the United States[2]. Based on those conversations, and your application, we believe that the manufacturers are very unlikely to guarantee a NOx emission rate of less than 0.10 lb/mmBtu for biomass combustion in a Bubbling Fluidized Bed (BFB) boiler using Selective Non-Catalytic Reduction (SNCR) for NOx reduction. Therefore, unless and until we obtain additional information

[1] We note that you did provide specifications from other TDF sources.
[2] Kerry Flick with Metso Power, John DeFusco with Babcock & Wilcox, and Rich Abrams with Babcock Power

leading to a different conclusion, we plan to use 0.10 lb/mmBtu as the NOx rate in the BACT analysis for SNCR.

EPD asked you on a couple of occasions[3] to look into the technical feasibility and cost effectiveness of Selective Catalytic Reduction (SCR) for NOx reduction. In your original application, you stated, "SCR is considered technically infeasible and will not be considered further in this application.[4]" Then in the April 16, 2008 letter, you stated, with respect to a 'back-end' SCR system that the "cost effectiveness of the 'back-end' SCR system would be approximately $63,400 [per ton]." You also stated that the system would require a 224.9 mmBtu/hr reheat system[5]. Finally, in your August 1, 2008 letter you stated, "No additional scenarios are technically feasible, and therefore, no additional calculations were performed."

We believe that your reported cost effectiveness for a 'back-end' system is too high and we believe that there is an additional scenario that should be considered. Specifically, we request that you obtain a quote from Babcock Power Environmental for their Regenerative Selective Catalytic Reduction (RSCR) system. The quote should include the option for addition of an oxidation catalyst for CO control. You can contact Mr. Rich Abrams, Vice President of Renewable Energy for Babcock Power Inc. at 508-854-1140 (e-mail is rabrams@babcockpower.com).

CO BACT (And Surrogate for Organic HAPs)

Similar to the discussion above regarding NOx, based on our recent conversations with boiler manufacturers, and your application, we believe that the manufacturers are very unlikely to guarantee a CO emission rate of less than 0.149 lb/mmBtu for biomass combustion in a Bubbling Fluidized Bed (BFB) using good combustion practices. Therefore, unless and until we obtain additional information leading to a different conclusion, we plan to use 0.149 lb/mmBtu as the CO rate in the BACT analysis for good combustion practices. To allow for variability, this rate would be based on a 30-day average. If the RSCR technology described above for reducing NOx is determined to be BACT for NOx, it is possible that the addition of the oxidation catalyst will be technically feasible and cost effective. That is why we requested you obtain the RSCR quote with the option for addition of an oxidation catalyst for CO control.

PM10 BACT (PM10 as Surrogate for PM2.5 BACT and PM10 as Surrogate for non-mercury metal HAPs)

Longleaf Energy coal plant proposed in Early County has proposed a PM10 emission rate of 0.010 lb/mmBtu (filterable) as MACT in their recent 112(g) application. Your original application says that similar projects have been permitted as low as 0.010 lb/mmBtu[6]. During our meeting with Babcock Power, their representative stated that rate was definitely achievable for a biomass boiler equipped with a dry scrubber and baghouse. Therefore, unless and until we obtain additional information leading to a different conclusion, we plan to use 0.010 lb/mmBtu filterable and 0.018 lb/mmBtu total as the BACT rates for PM10. These rates would be based on the stack test methods listed in the permit.

[3] February 15, 2008 letter, item #8 and June 17, 2008 letter, page 7
[4] Page 6-13
[5] Page 7 and Attachment B in letter dated April 16, 2008
[6] Page 6-19

US EPA published a final rule for "Implementation of the New Source Review (NSR) Program for Particulate Matter Less than 2.5 Micrometers (PM2.5)." in the Federal Register on May 16, 2008. For States with SIP approved programs, such as Georgia, the final rule allows a transition period to allow the States time to amend their own rules. In the meantime, these States are allowed to continue the practice of using PM10 as a surrogate for PM2.5[7]. Since we have not had time to our amend our rules to incorporate the requirements for PM2.5, we are using PM10 as a surrogate for PM2.5 for your application.

SO2 BACT

Your claim that uncontrolled biomass SO2 emissions are 0.92 lb/mmBtu[8], and your proposal that BACT for burning 100% biomass should be 0.06 lb/mmBtu, are simply not credible based on available information. Your original application listed the sulfur content of biomass as 0.02% sulfur[9]. We believe this figure to be somewhat high, but not completely unreasonable. We believe a more realistic figure, based on your own data supplied with the application[10] and based on EPA AP-42 emission factors for wood combustion[11], is 0.01% sulfur.

We specifically raised this issue to you in our June 17, 2008 letter and you were specifically asked to revisit your SO2 calculations during our meeting of September 25, 2008. Your e-mail to me on September 26, 2008 acknowledged this. You never did.

Assuming an average sulfur content of biomass of 0.01% sulfur, 30% control of SO2 in the boiler (as stated in your application), and 70% control of SO2 in the scrubber (EPD has lowered this from your estimate of 91% control based on the lower uncontrolled SO2 emission rate), results in a proposed BACT emission rate of 0.010 lb/mmBtu for SO2. Therefore, unless and until we obtain additional information leading to a different conclusion, we plan to use 0.010 lb/mmBtu as the BACT rate for SO2. To allow for variability, this limit would be based on a 30-day average. Calculations are attached.

Acid Gas HAPs (Hydrogen Chloride as Surrogate)

Emissions of Hydrogen Chloride (HCl) from biomass combustion are related to the amount of chlorine in the biomass. Even though you included HCl in your 112(g) analysis in Appendix B of your August 1, 2008 submission, we can not figure out how you derived an uncontrolled HCl emission rate of 0.19 lb/mmBtu and a controlled HCl emission rate of 0.019 lb/mmBtu. We do note that the uncontrolled HCl emission rate in EPA's AP-42 document is 0.019 lb/mmBtu[12]. Based on that data alone, a controlled emission rate of 0.019 lb/mmBtu seems unreasonable. In the absence of any more specific data related to the chlorine content of the biomass, we see no other alternative than to look towards the National Association of Clean Air Agencies (NACAA) document released June 2008 titled, "Reducing Hazardous Air Pollutants from Industrial Boilers: Model Permit Guidance." This document provides

[7] 73 FR 28340
[8] We note that the application contains contradictory information regarding the uncontrolled SO2 emission rate. For example, on page 6 of the August 1, 2008 submittal it shows 0.92 lb/mmBtu three times and 0.092 lb/mmBtu two times.
[9] Page 4-1
[10] Wood Sulfur Information Attachment to November 30, 2007 Yellow Pine Response Letter to October 19, 2007 EPD Comments
[11] Table 1.6-2 of AP-42 shows an uncontrolled emission rate of 0.025 lb/mmBtu.
[12] Table 1.6-3 of AP-42

guidance on achievable HAP emission rates for existing boilers and offers a recommended range of emission rates from 0.006 lb/mmBtu to 0.012 lb/mmBtu. Because your boiler would be new and equipped with state of the art pollution controls (dry scrubber for SO2 and HCl control), we believe the low end of NACAA's recommended range is appropriate. Therefore, unless and until we obtain additional information leading to a different conclusion, we plan to use 0.006 lb/mmBtu as the MACT rate for HCl (as a surrogate for Acid Gas HAPs).

Conclusion

If you have any questions or need more information, please contact me at (404) 363-7020 or via email at james.capp@dnr.state.ga.us.

Sincerely,

James Capp

James A. Capp
Program Manager
Stationary Source Permitting Program

Enclosure

Yellow Pine SO2 Emission Estimates
PSD Application Number 17700

Boiler Capacity	1,529	MMBtu/hr (per permit application)
Biomass Heat Content	4,350	Btu/lb (per permit application)

Division SO2 Emission Estimates

Fuel	Sulfur Content (% sulfur)	Sulfur Dioxide/Sulfur Ratio (lb/lb)	Uncontrolled SO2 Emitted (lbs/hr)	SO2 Emitted (uncontrolled) (lbs/MMBtu)	Proposed BFB Control (%)	Proposed Scrubber Control (%)	Proposed Combined Efficiency of BFB and Scrubber (%)	Proposed SO2 Emitted (controlled) (lb/MMBtu)
Biomass	0.01	2	70.30	0.0460	30	70	79	0.0097

Uncontrolled SO2 Emitted (lb/hr) = Uncontrolled SO2 (lb/mmBtu) * (Boiler Capacity MMBtu/hr)
SO2 Emitted (uncontrolled) (lb/MMBtu) = (Sulfur % / 100) * (2 lb SO2 / lb Sulfur) * ($1x10^6$ Btu/MMBtu) / (Biomass Heat Content Btu/lb)
Proposed Combined Efficiency of BFB and Scrubber (%) = % BFB Control + (100 - % BFB Control) * (% Scrubber Control) / 100
Proposed SO2 Emitted (controlled) (lb/MMBtu) = (SO2 Emitted Uncontrolled (lb/mmBtu)) * (1 - Combined % Reduction of BFB & Scrubber/100)