PERMITTEE

Rayonier Performance Fibers, LLC
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Authorized Representative:
Mr. F. J. Perrett, General Manager

Air Permit No. 0890004-027-AC
Permit Expires: April 30, 2011
Issue Date: DRAFT
Fernandina Beach Sulfite Pulp Mill
ARMS ID No. 0890004
Sulfite Recovery Boiler (SRB)
Refurbishment Project

PROJECT AND LOCATION

This permit authorizes repair and replacement of components on the existing SRB (Emission Unit No. 006), rated at a nominal heat input rate of 653.1 MM Btu per hour firing a maximum of 35 tons per hour of red liquor solids (RLS) (dry basis), based on a nominal heating value of 9330 Btu per pound of RLS. The proposed work will be conducted at the Fernandina Beach Pulp Mill, which is a Sulfite Pulp Mill (Standard Industrial Classification No. 2611). The existing facility is located in Nassau County at the foot of Gum Street in Fernandina Beach, Florida. The UTM coordinates are Zone 14: 454.7 km East; 3392.2 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.); and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

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Executed in Jacksonville, Florida

DRAFT

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Christopher L. Kirts, P.E. Date
District Air Program Administrator

SUBSECTION A. FACILITY DESCRIPTION

The mill uses a sulfite (ammonia-base) process to produce various grades of chemical cellulose from pine wood-chips. There are only two other pulp mills located in the United States that produce products similar to the Fernandina Mill and neither of these mills use the same type of manufacturing process. This plant produces approximately 10 different grades of cellulose each with different specifications and customers. The amount of each grade of product that is produced is based on market demand. The cellulose produced at this mill goes into such products as plastics, photographic film, LCD screens, paints, cigarette filters, pharmaceuticals, food products, cosmetics and textiles. Customers of these products have stringent quality requirements. This mill produces approximately 150,000 tons of performance fibers annually.

The existing facility consists of the following emissions units.

E.U. ID No.	Brief Description
-005	Vent Gas Scrubber and Direct Contact Condenser
-006	Sulfite Recovery Boiler firing RLS, No. 6 fuel oil, and No. 2 fuel oil
-007	Molten sulfur handling area.
-010	Biological Effluent Treatment System
-011	Dissolving-Grade Bleaching System
-021	Evaporator Vents Methanol Condenser
-022	Bubbling Fluidized Bed No. 6 Power Boiler

Unregulated Emissions Units and/or Activities: *Refer to Appendix U-1, List of Unregulated Emissions Units and/or Activities*

The proposed project will affect the following emissions unit.

E.U. ID No.	Brief Description
-006	Sulfite Recovery Boiler firing RLS, No. 6 fuel oil, and No. 2 fuel oil

PROJECT DESCRIPTION

The existing SRB (Emission Unit No. 006) is rated at a nominal heat input rate of 653.1 MM Btu per hour firing a maximum of 35 tons per hour of red liquor solids (RLS) (dry basis), based on a nominal heating value of 9330 Btu per pound of RLS. Rayonier Performance Fibers, LLC proposes extensive maintenance on the SRB to consist of the repair and replacement of numerous equipment including the steam drum, mud drum, air heater components, generating bank steam tubes, and minor modifications to the side wall, outlet duct, rear wall, screen supply and roof steam tubes. Boiler refractory will also be replaced as necessary to accommodate these repairs.

The project is not intended to regain lost capacity and will not result in any increase in the SRB heat input, fuel consumption, steam generation capacity or pulp production. There are no known defects

or deficiencies restricting operation and the unit can currently sustain the permitted heat input rate. Records indicate that the SRB is currently capable of operating at the permitted capacity. Pursuant to Rule 62-212.400, F.A.C., Rayonier Performance Fibers, LLC provided information to show that the project will not exceed the significant emissions rates that require preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality. In accordance with Rule 62-212.300, F.A.C., the permit requires Rayonier Performance Fibers, LLC to provide reports summarizing the actual emissions for each year during the 5-year period following completion of the project. This is to ensure that the project remains minor with respect to PSD preconstruction review.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

1. Permitting Authority: The permitting authority for this project is the Northeast District Office Air Program, Florida Department of Environmental Protection (Department). The Northeast District Office's mailing address is 7825 Baymeadows Way, Suite B200, Jacksonville, Florida 32256-7590. All documents related to applications for permits to operate an emissions unit shall be submitted to the Northeast District.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Northeast District Office. The mailing address and phone number of the District Office is: 7825 Baymeadows Way, Suite B200, Jacksonville, Florida 32256. The Permitting Authority's telephone number is 904/807-3300.

3. Appendices: The following Appendices are attached as part of this permit:

   a. Appendix A. Citation Formats and Glossary of Common Terms;

   b. Appendix B. General Conditions;

   c. Appendix C. Common Conditions

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

8. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation of the refurbished equipment. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting and Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

SULFITE RECOVERY BOILER (EU 006)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
006	Sulfite Recovery Boiler w/wet scrubber followed by Brinks Demister

Emission Unit 006 identifies the SRB. This unit fires red liquor solids (RLS) as the primary fuel to produce steam and recover sulfur. Up to 0.5 gallons per minute of ultra low sulfur No. 2 distillate fuel oil may also be fired (pre-blended with the RLS). The red liquor contains sulfur compounds, which are converted to sulfur dioxide during combustion. The sulfur dioxide is recovered from the flue gas in the multi-stage, wet scrubber that utilizes ammonium hydroxide as the scrubbing media. The sulfur dioxide reacts with the ammonium hydroxide to form ammonium bisulfite. The ammonium bisulfite solution is drawn off, filtered through sand filters, and pumped to the acid plant and recycled as the base for making the cooking acid used in the digesters.

Residual fuel oil is fired as a startup, shutdown and supplemental fuel (e.g. maintain the flame stability of the boiler).

The total maximum operational rate of this emissions unit is 70,000 lbs of oven dry RLS/hr.

The sulfur dioxide in the flue gas also reacts with the ammonium hydroxide (scrubbing media), to form ammonium sulfate, a fine, aerosol-type particulate that is emitted in the moist vapor leaving the scrubber. This ammonium sulfate is the predominate source of particulate emissions from the SRB. The Particulate Matter emissions are controlled by controlled by the Brinks Demister (a filter unit). The Brinks Demister consists of four, enclosed rubber-lined metal compartments each containing 52 candles. Each candle is a 24-inch diameter, 12–feet high cylinder with 6 inches of tightly wound polyester fiber filter held within a concentric wire cage. Gases flow up through the center of each candle then pass through the 6 inches of filter medium, out an opening near the top of the compartment and into the stack.

The sulfur dioxide concentration within the stack is measured and recorded continuously using a Continuous Monitoring System (CMS).

At permitted capacity, the nominal exhaust gas flow rate is 125,280 dscfm at 8% oxygen with an exit temperature of 126° F. Exhaust gases exit a stack that is 7.33 feet in diameter and 264 feet tall.
The sulfur dioxide concentration within the stack is measured continuously using a CMS, therefore this emissions unit is exempt from CAM.

The BetaGuard Particulate Monitor is the CMS utilized to demonstrate compliance with 40 CFR 63, Subpart MM.

{Permitting note(s): This emissions unit is subject to Rule 17-2.03, F.A.C., Latest Reasonable Available Control Technology (LRACT dated 07-12-76), which was based on Washington State Standards for Sulfite Pulp Mills (WAC 18-38-040). This rule became 17-2.630, F.A.C. which became Best Available Control Technology (BACT) now Rule 62-212.400(6), F.A.C. This emissions unit was issued Final Order dated June 19, 1991, which included Alternate Sampling Procedure No. ASP-91-H-01, which approved the continual operation of the Brinks

Demister System in lieu of meeting the general visible emissions standard of less than 20% opacity as measured by EPA Method 9. This emissions unit is also regulated under NESHAP - 40 CFR 63, Subpart MM, adopted and incorporated by reference in Rule 62-204.800, F.A.C.

PROPOSED WORK

1. Sulfite Recovery Boiler: The permittee is authorized to conduct refurbishment and maintenance on the SRB including the repair and replacement of the following equipment:
   - Steam drum and associated components;
   - Mud drum and associated components;
   - Up to 100% of air heater components;
   - Up to 100% of generating bank steam tubes
   - Minor modifications to the side wall, outlet duct, rear wall, screen supply and roof steam tubes
   - Existing air heater rake style soot-blowers will be replaced with rotary soot-blowers to accommodate the new horizontal air heater configuration
   - Boiler refractory will also be replaced as necessary to accommodate these repairs

   [Application No. 0890004-027-AC]

PERFORMANCE RESTRICTIONS

2. Capacities and Fuels: The proposed work shall not result in any increase in the boiler heat input rate, fuel consumption rates and steam generation rates. [Rule 62-4.070(3), F.A.C. and Application No. 0890004-027-AC]

TESTING REQUIREMENTS

3. Actual Emissions Reporting: This permit is based on an analysis that compared baseline actual emissions with projected actual emissions and the project avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.

   a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of this permit.

   b. The permittee shall report to the Department within 60 days after the end of each calendar

year during the 5-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:

(1). The name, address and telephone number of the owner or operator of the major stationary source;
(2). The annual emissions as calculated pursuant to the provisions of 62-210.370, F.A.C., which are provided in Appendix C of this permit;
(3). If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and
(4). Any other information that the owner or operator wishes to include in the report.

c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.

d. For this project, the permittee estimated the following baseline actual emissions: 679.97 tons/year of carbon monoxide (CO); 1,977.46 tons/year of oxides of nitrogen (NO_X); 970.87 tons/year of sulfur dioxide (SO_2); 109.99 tons/year of particulate matter (PM), 99.93 tons/year particulate matter of 10 microns or less (PM_{10}); 8.45 tons/year of volatile organic compounds (VOC); 1.37E-02 tons/year of lead (Pb); 7.38E-04 tons/year of mercury (Hg); 0.066 tons/year of fluorides (F); and 42.66 tons/year of sulfuric acid mist (SAM).

e. The permittee shall compute and report annual emissions in accordance with Rule 62-210.370(2), F.A.C. as provide by Appendix C of this permit. For this project, the permittee shall use the following methods in reporting the actual annual emissions for the Recovery Boiler (identified as Emission Unit No. 006):

(1). The permittee shall use data collected from the CEMS to determine and report the actual annual emissions of SO_2. The permittee shall use data collected from the CEMS (process monitor) to determine and report the actual annual emissions of CO.
(2). The permittee shall use the data collected from the required stack tests to determine and report the actual annual emissions of PM/PM_{10}. The permittee shall follow the stack test methods, test procedures and test frequencies specified in the current Title V air operation permit.
(3). Unless otherwise approved by the Department, the permittee shall use the same emissions factors for reporting the actual annual emissions of NO_x, Pb, Hg, F, SAM, and VOC as used in the application to establish baseline emissions.
(4). As defined in Rule 62-210.370(2), F.A.C., the permittee shall use a more accurate methodology if it becomes available.

[Application No. 0890004-027-AC; Rules 62-212.300(1)(e), and 62-210.370, F.A.C.]

4. Additional Reporting Requirements: The permittee shall maintain accurate records of the costs associated with the refurbishment project. Concurrent with the first annual emissions report (required by Specific Condition No. 3. above) the permittee shall submit a comparison of the actual cost of the refurbishment project to the cost of an entirely new SRB to verify the **reconstruction** status in regards to 40 CFR 60.15, and Rule 62-204.800, F.A.C.