TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Rayonier Performance Fibers, LLC
PO Box 2002
Fernandina Beach, Florida 32035

Fernandina Beach Mill
ARMS Facility ID No. 0890004
Foot of Gum Street
Fernandina Beach, FL 32034

PROJECT

Project No. 0890004-036-AC
Application for Air Construction Permit
Sulfur Dioxide Project

COUNTY

Nassau, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Air Resources Section
7625 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

February 22, 2012

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial activities. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Facility Process Description and Location

Rayonier is an acid sulfite based pulp mill using ammonia as a base chemical for the manufacture of dissolving pulps. This plant produces approximately 10 different grades of pulp. The pulp produced at this plant is used in products such as plastics, photographic film, LCD screens, paints, cigarette filters, pharmaceuticals, food productions, cosmetics and textiles. The mill is permitted to produce 175,000 ADMT of pulp on a 12 month rolling total basis.

The sulfite process utilizes a sulfurous acid and ammonium bisulfite cooking solution to chemically separate the lignin from the cellulose. Pine wood chips and cooking solution are cooked in the six (6) batch digesters. The cooking process requires approximately 6 hours to complete. The unbleached sulfite pulp and spent cooking solution (SSL- spent sulfite liquor) are separated over vacuum washers (red stock washers). The unbleached pulp is then sent into the screening area to remove any knots and tailings (uncooked, woody materials), while the SSL is pumped to the evaporators to concentrate the solids content before being burned in the recovery boiler. The collected knots and tailings are pressed for use as fuel in the No. 6 Power Boiler.

The sulfurous acid and ammonium bisulfite cooking solution is prepared in the "acid plant".

The unbleached pulp exiting the screening operation enters the bleach plant. The first stage in the bleaching plant is the Hot Caustic Extraction (HCE) stage. Caustic soda is used to remove hemi-cellulose (small chain cellulose molecules), from the pulp in small pressure vessels called HCE cells. The mill currently operates eight (8) such cells. The pulp is washed after this HCE stage. The spent solution, Hot Caustic Extract, is concentrated in a set of evaporators before being sold to Kraft mills for its sodium content and energy value.

Pulp leaving the HCE stage is further purified in continuous and batch stages using peroxide, chlorine dioxide, chlorine, sodium hydroxide, and sodium hypochlorite depending upon the pulp grade

specifications. Following these bleaching stages, the pulp passes through centrifugal dirt cleaners before being sent to the pulp machine. The pulp machine forms the sheet by draining water from the pulp slurry (containing 99% water) over a moving wire to a consistency of 50% water. The remainder of the water is removed by passing the pulp sheet over pressing and drying cylinders heated internally with steam. The pulp sheet, which contains approximately 7% moisture, is then wound onto a "jumbo" before being transported to the finishing room where the pulp sheet is cut into smaller rolls or sheets based on customer specifications. No coatings are used on any of the pulp grades produced by the mill.

The digestion, the HCE stage, and the pulp machine are high users of steam for heating. The steam is produced in the power boiler. Steam is also used to produce about 100 percent of the mill's electricity needs.

The recovery boiler provides steam for the evaporators and its emissions are scrubbed for sulfur dioxide recovery using an ammonia solution. The ammonium bisulfite produced in the scrubber is used for cooking acid make-up.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- 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.
- This facility is a major source of air pollutants, other than HAPs.
- This facility has one or more emissions units subject to NSPS (40 CFR 60).
- This facility has one or more emissions units subject to NESHAP (40 CFR Part 61 or Part 63)

Project Description

The permittee is authorized to construct a new, taller stack for the Vent Gas Scrubber System (EU No. 005) and to extend the stack at the Power Boiler (EU No. 022), if needed; lower the allowable SO_2 emission limits for the Recovery Boiler (EU No. 006), Power Boiler (EU No. 022), and the Vent Gas Scrubber System (EU No. 005). Implementing these voluntary changes at the Fernandina Beach mill will lower the SO_2 impact from the Rayonier Performance Fibers, LLC facility on the ambient air of Nassau County. The new Sulfur Dioxide Project is not intended or expected to result in an increase in mill production 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.

Proposed Work/Changes

Vent Gas Scrubber (EU 005): The permittee is authorized to construct a new, taller stack for the Vent Gas Scrubber System. The existing stack is approximately 110 feet high. The proposed new stack will be at least 165 feet high. The applicant has also proposed to lower the maximum allowable emission limit for sulfur dioxide emissions from 250 ppm to 100 ppm. The higher stack

provides for better dispersion of SO_2 emissions and lowers the impact on the ambient air. Lowering the allowable SO_2 emission rate provides more favorable and realistic air modeling results when determining the mill's impact on ambient air concentrations of SO_2. A proposed stack height is determined using good engineering practices and air dispersion modeling results.

No. 6 Power Boiler (EU 022): The permittee is authorized to construct (if needed) a modified, taller stack for the No. 6 Power Boiler. The existing stack is approximately 190 feet high. The proposed modified stack will be approximately 210 feet high. The higher stack provides for better dispersion of SO_2 emissions and lowers the impact on the ambient air. The applicant has also proposed to lower the maximum allowable emission limit for sulfur dioxide emissions from 420 pounds per hour to: a. 180 lbs/hr with existing stack height of approximately 190 feet, or b. 250 lbs/hr with a modified stack height of 210 feet. Lowering the allowable SO_2 emission rate provides more favorable and realistic air modeling results when determining the mill's impact on ambient air concentrations of SO_2. A proposed stack height is determined using good engineering practices and air dispersion modeling results.

Recovery Boiler (EU 006): Lowering the allowable SO_2 emission rate provides more favorable and realistic air modeling results when determining the mill's impact on ambient air concentrations of SO_2.

{Permit Note: The permittee has demonstrated compliance with all the proposed lower SO_2 emission rates through previous testing and/or continuous monitoring system results.}

Processing Schedule

12/29/2011	Department received the application for a minor source air pollution construction permit, application complete.

2. PSD APPLICABILITY

General PSD Applicability

The Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. A PSD applicability review is required in areas currently in attainment with the state and federal AAQS or areas otherwise designated as "unclassifiable". A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit: 5 tons per year or more of lead; 250 tons per year or more of any regulated air pollutant; or 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 PSD-major facility categories (fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling

more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants.). Projects at existing or new major stationary sources are subject to PSD preconstruction review. In addition, proposed projects at existing minor sources are subject to PSD preconstruction review if potential emissions *from the proposed project* will exceed the PSD major stationary source thresholds.

Once a project becomes subject to PSD preconstruction review, each PSD pollutant is reviewed for PSD applicability based on emissions thresholds known as the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); Fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as nonmethane organic compounds (NMOC); and mercury (Hg). Pollutant emissions from the project exceeding these rates are considered "significant" and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

PSD Applicability for Project

The project is not subject to PSD review since there is not an increase nor a significant net increase in any affected PSD pollutant as a result of the project.

3. FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) REVIEW

Brief Discussion of Emissions and PSD Applicability

The Department concurs with the above conclusion and summary of the project.

Increasing the stack height (via a new stack) of the Vent Gas Scrubber System (EU 005) and increasing the stack height of the No. 6 Power Boiler (if needed) does not result in the increased emissions of a PSD regulated pollutant. The following table summarizes the allowable emissions of SO_2 prior to and after the proposed stack changes and lowered allowable emissions.

Table A. SO_2 Emission Summary

EU ID	Current SO_2 Allowables	Proposed SO_2 Allowables
005	63.25 lbs/hr (250 ppm)	25.3 lbs/hr (100ppm)
006	353.28 lbs/hr (300ppmvd)	294.4 lbs/hr (250 ppmvd)
022	420 lbs/hr	250 lbs/hr (with modified 210 foot stack)
022	420 lbs/hr	180 lbs/hr (with current 190 foot stack)

By lowering the allowable emission limits of SO_2 at the three emission units affected by this project and increasing the stack height at the sources described above Rayonier Performance Fibers, LLC will lower the SO_2 impact from the facility on the ambient air of Nassau County.

Therefore, the project requires a minor air construction permit to authorize the construction and permit modifications described above. Since baseline actual to projected actual emissions were not used to determine the applicability status of PSD the permittee is not required to submit annual emission estimates of actual emissions.

NSPS Applicability

No additional NSPS regulations are applicable to these emission units due to this project.

NESHAP Applicability

No additional NESHAP regulations are applicable to these emission units due to this project.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Jerry Woosley is the project specialist responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project specialist at the Florida Department of Environmental Protection, Northeast District Office, 7525 Baymeadows Way, Suite 200B, Jacksonville, FL 32256-7590, Phone: 904/256-1700.