Title V Air Operation Permit Revision
Permit No. 0890004-042-AV

APPLICANT

The applicant for this project is Rayonier Performance Fibers, LLC. The applicant's responsible official and mailing address are: C. A. McDonald, General Manager, Rayonier Performance Fibers, LLC, Fernandina Beach Sulfite Pulp Mill, P. O. Box 2002, Fernandina Beach, FL 32035.

FACILITY DESCRIPTION

Rayonier is an acid sulfite based pulp mill using ammonia as a base chemical for the manufacture of dissolving pulp. 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 produces approximately 150,000 tons of performance fibers annually.

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 an 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~~s~~. Steam is also used to produce about 90 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.

40 CFR 63 Subpart S Applicability

This facility is subject to the requirements of 40 CFR 63 Subpart S. Hazardous air pollutant emission points include 1) the combined digester and washer systems vent where the methanol is removed by the Direct Contact Condenser, 2) the vents from the two sets of multiple effect evaporators where the methanol is removed by a Direct Contact Condenser, and 3) the waste water collection and treatment systems where the spent scrubbing media from the direct contact condensers is routed.

There are three streams of water that contain collected methanol. These are a) alkali in the water stream used in the Vent Gas Scrubber, b) the liquid effluent stream from the Direct Contact Condenser used to treat the gases from the digester system vent and the pulp washing system, and c) the liquid effluent stream from the Direct Contact Condenser used to treat the collected gases from the Evaporator System Vent.

These streams are sent to the wastewater treatment system via open pump stations. The two streams used to collect methanol from the pulp washing system and the digester system vent are sent to the Number 1 Pump Station and Bar Screen. The stream collecting the methanol from the evaporator system vent is discharged to the Number 3 Pump Station.

Rayonier is authorized to use WATER9 to calculate the fraction of incoming methanol in each of the three mentioned streams that is emitted to the air. In each case, the stream enters an enclosed sewer line until it is discharged into the open pump station. The WATER9 model is also used to estimate the total methanol emissions from the pump stations.

The WATER9 model is also used to predict the fraction of the influent methanol emitted to the air from the biological effluent treatment system. Rayonier has determined, using the procedures in Appendix C to Part 63, that the aeration stabilization basin contains five mixing units.

The total methanol emissions is determined from the direct measurement of the methanol emissions from the pulping and washing Direct Contact Condenser and those from the evaporator Direct Contact Condenser, and the WATER9 determined methanol emissions from the methanol concentration in the liquid streams from each pump station (No. 1 Pump Station & Bar Screen and No. 3 Pump Station) and the biological effluent treatment system.

Because the Fernandina Beach Mill produces dissolving and specialty grade pulp, the mill was required to achieve compliance with the bleach plant provisions of 40 CFR 63.445 as expeditiously as practicable but in no event later than 4 years from the issuance of Construction Permit No. 0890004-018-AC, i.e. no later than February 19, 2010. The bleach plant collection and control system started operation on February 18, 2010.

40 CFR 63 Subpart MM Applicability

The Recovery Boiler is subject to the requirements of 40 CFR 63 Subpart MM. The standard has established particulate matter as the surrogate for HAP metals. The scrubber on the recovery boiler is installed to recover sulfur as opposed to the control of particulates. Therefore, in this case, the scrubber parameters required by the Subpart MM standards do not relate to particulate emissions. Due to the scrubber, the gas stream from the recovery boiler is wet and therefore opacity monitoring is unsuitable. On May 19, 2004, EPA approved the use of a beta monitor as an Alternative Monitoring Method instead of the standard required continuous opacity monitor and scrubber operating parameters.

40 CFR 63 Subpart DDDDD Applicability

The No. 6 Power Boiler is subject to the requirements of 40 CFR 63 Subpart DDDDD. On September 13, 2004, EPA promulgated national emission standards for hazardous air pollutants (NESHAP) for industrial, commercial, and institutional boilers and process heaters. On June 19, 2007, the United States Court of Appeals for the District of Columbia Circuit vacated and remanded the standards. On March 21, 2011, EPA promulgated new standards for 40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. This final rule was scheduled to become effective on May 20, 2011. On May 18, 2011, EPA published a notice delaying the effective dates of the March 21, 2011 final rule until such time as judicial review is no longer pending or until EPA completes its reconsideration of the rules, whichever is earlier. On December 23, 2011, EPA published the reconsideration proposal (40 CFR 63, subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). The EPA intends to finalize the reconsideration in the spring of 2012. On January 9, 2012, the United States Court of Appeals for the District of Columbia Circuit issued a decision vacating and remanding the EPA May 18, 2011 delay notice. As such, the March 21, 2011 promulgated 40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters is now effective.

Emissions Units Descriptions

No. 1 Power Boiler (Emissions Unit No. 001):

The No. 1 Power Boiler was shutdown on May 26, 2007. This emissions unit is therefore removed from the Title V Permit.

No. 2 Power Boiler (Emissions Unit No. 002):

The No. 2 Power Boiler was shutdown on May 26, 2007. This emissions unit is therefore removed from the Title V Permit.

No. 3 Power Boiler (Emissions Unit No. 003):

The No. 3 Power Boiler was shutdown on May 26, 2007. This emissions unit is therefore removed from the Title V Permit.

Vent Gas Scrubber and Direct Contact Condenser (Emissions Unit No. 005):
Emissions from numerous vents from the cooking acid plant, the red stock washers, the unwashed stock tank, the spent sulfite liquor storage tanks, the spent sulfite liquor washers, the digesters, and the blow pits are collected and scrubbed in the Vent Gas Scrubber. The scrubber consists of a packed tower containing two designated packed sections. The lower section is designed for sulfur dioxide emissions control via gas absorption using alkaline scrubbing media (soda ash or sodium hydroxide). The absorbate, sodium bisulfite, is pumped from the scrubber sump to the sodium bisulfite storage tank. From here, it is recirculated back to the scrubber for reuse.

The sulfur dioxide concentration in the stack is continuously measured with a CMS, therefore, this emissions unit is exempt from CAM.

The standards of 40 CFR 63 Subpart S require sulfite mills to control the total HAP emissions from each digester system vent, each evaporator system vent, and each pulp washing system. These systems are to be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements 40 CFR 63.444(c). For the digester system vent and pulp washing system, Rayonier uses the upper packed section of the Vent Gas Scrubber as the control device to meet the referenced Subpart S standards, i.e. the Direct Contact Condenser. The upper packed section consists of a 6-foot section of pall ring packing for condensing methanol from the gas stream. The gas stream is cooled below 150° F and contacted directly with fresh well water at approximately 80° F. The methanol in the gas stream condenses at this temperature, dissolves in the water and is removed from the gas stream. This is a once through process. The condensed methanol held in the water is sent to the biological effluent treatment system for treatment in order to comply with the requirements of 40 CFR 63 Subpart S.

40 CFR 63.453(a) requires that the pH or oxidation/reduction potential of the gas scrubber effluent, the gas scrubber vent gas inlet flow rate, and the gas scrubber liquid influent flow rate to be continuously monitored for each gas scrubber used to comply with the sulfite pulping system requirements of 40 CFR 63.444(c). However, the measurement of pH or oxidization/reduction potential and scrubber gas inlet flow rate are not adequate indicators of the performance of the direct contact condenser due to the fact that there is little change that occurs in the pH or oxidation/reduction potential when the cooler influent water cools the gas stream and the methanol dissolves in the water.

40 CFR 63.453(m) requires facilities using a control device, technique or an alternative parameter other than those specified in the monitoring section of the Subpart, to install a CMS and establish appropriate operating parameters to be monitored that demonstrate continuous compliance with the applicable control requirements. Rayonier proposed that the final gas temperature and the liquid inlet flow rate be monitored as alternative parameters. The Department approved the use of these parameters in the Initial Performance Test Plan Approval letter dated March 7, 2002.

Recovery Boiler (Emissions Unit No. 006):
The hot flue gas from the recovery boiler along with the non-condensable gases from the evaporator methanol condensers (EU 021), are routed to a multi-stage, wet scrubber followed by a four-compartment filter unit. Spent Sulfite Liquor or a mixture of Spent Sulfite Liquor and ultra low sulfur diesel fuel oil is burned in the recovery boiler to produce steam and recycle sulfur. The evaporated, spent sulfite 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. Ammonium hydroxide is 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.

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 recovery boiler as the spent sulfite liquor (red liquor fired), contains little ash.

Collecting the ammonium sulfate is difficult because it is a wet stream. Measuring opacity is also difficult because the water vapor tends to interfere with the measurements. Ammonium sulfate also has a high reflectance and therefore the use of opacity monitors is not successful.

On December 12, 1990, the facility petitioned for the approval of the operation of a Brinks Demister System in lieu of meeting the July 12, 1976 LRACT Determination of visible emissions of 10% opacity. The LRACT visible emissions standard of 10% opacity was based on the State of Washington's standard, which was rescinded at the time of the 1990 petition. During this case, the Department concluded that the LRACT visible emissions standard was inappropriate and the general visible emissions standard of less than 20% opacity (now Rule 62-296.320(4)(b)1., F.A.C.), was applied to this emissions unit. As justification for the alternate compliance verification procedure, the facility provided test results, which demonstrated plume interferences due to humidity, which inhibited accurate evaluations of the plume opacity. It was therefore determined, in the Final Order dated June 19, 1991, that compliance with the opacity limitation will be based on the record of on-line operation of the Brinks Demister System. An Alternate Sampling Procedure was issued for this opacity determination, No. ASP-91-H-01.

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 tube wrapped with 6 inches of tightly wound polyester fiber filter. 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 on to the stack.

The flue gas is normally passed through 3 of the 4 filter compartments, while the fourth compartment is on a wash cycle. Much of the particulate flows with the moisture down the inside of the candle and out to the effluent treatment system while the filters are in operation. However, some particulate is caught within the filter medium and must be periodically washed from the filters. The washing is accomplished by sealing the gas inlet with water in the bottom of the compartment and adding evaporator condensate (acidic) to dissolve any ammonium sulfate built up within the filters.

Fuel Oil is fired in the recovery boiler to heat the boiler and prepare the spent sulfite liquor for burning. The heat input from this oil firing is considerably less than from full-spent sulfite liquor firing. During the burning of oil, the flue gas is completely scrubbed by the scrubber and the sulfur dioxide is removed with the ammonia/water media. Because there is far less sulfur dioxide in the flue gas when firing only oil, very little ammonium bisulfite is formed from the gas coming in contact with the ammonia/water media. The Brinks Demister is bypassed during periods of startup when oil is burned. During this period, the filters are not needed and are not used since any fine oil-derived particulate, which gets through the scrubber, has the potential of plugging the filter medium. When the first spent sulfite liquor gun is introduced to the boiler, ammonia water is used for scrubbing, the bypass valve is closed and all flue gas passes through the Brinks mist filters.

The SRB was refurbished in early 2010 authorized by permit no. 0890004-027-AC.

This emissions unit has a CMS required for compliance purposes; therefore, it is exempt from CAM for SO_2 monitoring. This emissions unit is subject to 40 CFR 63 Subpart MM; therefore, it is exempt from CAM for particulate monitoring.

Molten Sulfur storage and handling facility (Emissions Unit No. 007):

Molten sulfur is transferred from rail tank cars to a 55,000-gallon storage tank via an enclosed piping system. The surface below the rail cars is paved and bermed to capture any potential spills. All emissions are fugitive in nature and are associated with spills.

CAM is not applicable to this emissions unit.

This unit is classified as an unregulated emissions unit.

Biological Effluent Treatment System (Emissions Unit No. 010):

The effluent from 1) the spent scrubber media from the Vent Gas Scrubber, 2) the water stream from the methanol Direct Contract Condenser at the Vent Gas Scrubber, and 3) the liquid effluent from the pre-condenser and the main condenser at the Evaporator Vents Methanol Condenser System are combined with other mill effluent and treated in a primary, open clarifier and the aerated stabilization basin (biological treatment system). The biological treatment removes the methanol from the effluent via bacterial digestion.

Dissolving-Grade Bleaching System (Emissions Unit No. 011)

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. The bleaching area of the facility generally consists of various pulp washers and seal tanks, screen tank, chlorine tower, mild extraction tower, continuous bleaching tower, surge and dump tanks, chlorine dioxide tower, and cold caustic extraction tower. Gaseous hazardous air pollutant (HAP) emissions are collected from the following equipment: chlorination tower, old screen tank, continuous bleaching tower, chlorine dioxide retention tower, Nos. 3, 4, 5, and 5A washer and seal tanks, stock surge tank (to No. 4 washer), and last stage dump tank. HAPs are transported to the Rotabed Model No. 42/60 bisulfite venturi type scrubber for removal. The design air flow rate is approximately 10,000 ACFM. The HAP collection and control system started up on February 18, 2010.

Evaporator Vents Methanol Condenser System (Emissions Unit No. 021):

The steam that is used to eject the vent gases from the two trains of multiple effect evaporators dedicated to increasing the solids concentration of red liquor, along with the evaporator vent gases themselves, are piped to a pre-condenser which condenses the steam followed by the main condenser which condenses the methanol.

In addition, a third multiple effect evaporator train consisting of three (3) refurbished existing evaporators bodies, authorized to be installed under Construction Permit No. 0890004-018-AC, shall be used to increase the solids concentration of weak Hot Caustic Extract (the spent solution from the pulp washed after the Hot Caustic Extraction stage which is sold to Kraft mills for its sodium content and energy value). This third MEE train is also vented to the pre-condenser followed by the main condenser and the multi-stage wet scrubber/Brinks Demister at the Recovery boiler (Emissions Unit No. 006) before being vented to the atmosphere.

The water used to condense the steam and methanol in the two condensers is reclaimed from the biological effluent treatment system after the methanol has been digested. The condensate formed in the pre-condenser and the main condenser is sewered to the biological effluent treatment system via the Number 3 Pump Station for compliance with the 40 CFR 63 Subpart S requirements. The non-condensable gases from the main condenser

are sent to the multi-stage wet scrubber/Brinks Demister at the Recovery boiler (Emissions Unit No. 006) before being vented to the atmosphere.

No. 6 Power Boiler (Emissions Unit No. 022):

The No. 6 Power Boiler is a Bubbling Fluidized Bed boiler that produces steam for electrical generation and usage in the manufacturing process. The total maximum operational heat input of this emissions unit is 660 MMBtu/hr (24-hr average). This unit is authorized to fire biomass (green bark, chips, knots, fines, and landscape waste), tires, No. 2 fuel oil for startup, No. 6 fuel oil with a maximum sulfur content of 2.5% by weight, small quantities of facility-generated on-specification used oil (to be blended with the No. 6 fuel oil); and mill effluent treatment system solids (primary and secondary sludge only). The mill effluent treatment system solids (primary and secondary sludge only) addition was authorized by permit no. 0890004-026-AC. Particulate matter emissions are controlled with a large settling chamber followed by an electrostatic precipitator (ESP). NO_x emissions are reduced by staged combustion and flue gas recirculation (FGR). A selective non-catalytic reduction (SNCR) system is also installed to control NO_x emissions (may be used as determined by plant personnel). This system consists of an ammonia tank, pumps, piping, compressed air delivery, injectors, and a control system. Acid gases are controlled by a wet alkaline scrubber located after the ESP and induced draft fan.

This emissions unit is subject to CAM requirements.

Temporary Emergency Generators (Emissions Unit No. 024):

The Temporary Emergency Generators will be operated in the event of power supply disruptions at the facility. The Generator engines will normally be compression ignition Caterpillar model no. 3516 or similarly sized engines firing 15 ppm (maximum) by weight sulfur content No. 2 fuel oil and/or biodiesel fuel. Each engine is nominally rated at 2682 hp with a maximum fuel consumption capacity of 126.6 gallons per hour. The maximum annual fuel usage of all generators combined will not exceed 272,500 gallons per year. The nominally sized generator is rated at approximately 2000 kilowatts (kW).

The temporary emergency generators are not subject to NSPS 40 CFR 60, Subpart IIII, Stationary Performance Standards for Compression Ignition Engines nor NESHAP 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines since the engines meet the definition of non road engines and will not be located at the site for longer than 12 months.

PROJECT DESCRIPTION

The purpose of this permit is to revise the Title V air operation permit No. 0890004-041-AV for the above referenced facility to incorporate Air Construction Permit Nos. 0890004-036-AC and 0890004-040-AC.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Revision received January 31, 2014.
Notice of Intent to Issue Air Permit issued February 24, 2014.
Public Notice Published March 19, 2014 in the Fernandina Beach News-Leader.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility **is** identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility **is** a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility **does** operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility **does** operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAIR: The facility **is not** subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) Emissions Unit 022 (No. 6 Power Boiler)

PROJECT REVIEW

Numerically list a discussion of the reasons for the changes being made as part of this project, followed by the conditions(s) being changed. Show the changes in the condition with a ~~strikethrough format~~ for deletions and a double underline format for additions.

1. A.2. Sulfur Dioxide. Sulfur Dioxide (SO_2) emissions shall not exceed ~~250 ppm (28,350 ACFM, 130°F) as a 3 hour average.~~ 100 ppm (3 hour average).

[Operation permit No. 0890004-004-AO; Construction Permit Nos. 0890004-002-AC, ~~and~~ 0890004-010-AC and 0890004-036-AC]

2. A.10. This EU is subject to the attached Appendix CP2.

3. B.6. Sulfur Dioxide. The SO_2 concentration in the stack gas shall not exceed ~~300 ppm on a dry basis based upon a 3 hour average.~~ 250 ppmvd (3 hour average). ~~SO_2 emissions shall not exceed 321.9 pounds per hour and 1409.92 tons per year.~~

[LRACT analysis dated 7/12/76 based on State of Washington Sulfite Pulp Mill Rules, OGC Case No. 90-0332, DOAH Case 90-2153, Air Construction Permit No. 0890004-001-AC, Air Operation permit 0890004-003-AO, Rule 62-212.400(6), F.A.C.; Air Construction permit 0890004-017-AC and Air Construction Permit No. 0890004-036-AC]

4. D.1. Permitted Capacity. The maximum heat input rate is as follows:

a. ~~525~~ 660 MMBtu per hour based on a 24-hour average, which is approximately ~~330,000~~400,000 lb/hour of steam production.[1, 2]

b. ~~450~~525 MMBtu per hour based on an annual basis, which is approximately ~~286,000~~ 330,000 lb/hr of steam production.[2]

[1.] ~~Initial and~~ Annual compliance testing shall be conducted within 90% of the permitted heat input rate.
[2.] Demonstration through recordkeeping on a 12-month rolling average basis.

[Rules 62-4.070(3), 62-204.800, 62-212.200(PTE), F.A.C., Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC; Air Construction permit No. 0890004-040-AC]

5. D.2. Methods of Operation. This boiler may be fired with:

a. Biomass, consisting of green bark, knots, chips, fines and landscape waste.

b. Tire derived fuel (TDF).

c. No. 6 fuel oil with a maximum sulfur content of 2.5%, by weight, during startup, shutdown, or as a temporary alternate fuel during solid fuel feed upsets.

d. Facility-generated on-specification used oil with a maximum sulfur content of 2.5%, by weight, and shall be blended with the No. 6 fuel oil ~~or spent sulfite liquor prior to firing~~....

[Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC; Construction Permit No. 0890004-026-AC; Rule 62-710.210, F.A.C.; Construction Permit No. 0890004-040-AC; Rule 62-4.070, F.A.C.; and, 40 CFR Part 279]

6. D.6. SNCR NH_3 Injection Rate: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain a flow meter to measure and record the NH_3 injection rate for the SNCR system for the No. 6 Boiler. NH_3 injection records shall be maintained on site and made available upon request.

[Rule 62-4.070(3) F.A.C.]

7. D.6. Particulate Matter (PM) Emissions (As determined by EPA Method Compliance Testing) as stated in **D.22 and D.23.):**

a. PM emissions shall not exceed ~~0.07~~ 0.0557 lb/MMBtu heat input; nor 36.75 lbs/hr and ~~138.0~~ 128.0 TPY. PM emissions shall be determined by the average of three runs in accordance with Environmental Protection Agency (EPA) Reference Method (RM) 5. Each run shall be a minimum of 60 minutes in duration.

[Construction Permit No. 0890004-018-AC; Construction Permit No.0890004-021-AC; Air Construction Permit No. 0890004-040-AC; Applicant Requested Emission Limit; PSD Review Avoidance; and Rule 62-4.070(3), F.A.C.]

b. PM emissions shall not exceed 43 nanograms per joule heat input (0.10 lb per million Btu) derived from fossil fuel or fossil fuel and wood residue; nor ~~52.5~~ 66.0 lbs/hr. PM emissions shall be determined by the average of three runs in accordance with EPA RM 5. Each run shall be a minimum of 60 minutes in duration.

[40 CFR 60.42(a)(1); Air Construction Permit No. 0890004-040-AC]

c. PM emissions shall not exceed 0.2 lb/MMBtu heat input of carbonaceous fuel plus 0.1 lb/MMBtu heat input of fossil fuel; nor ~~105~~132.0 lbs/hr. PM emissions shall be determined by the average of three runs in accordance with EPA RM 5. Each run shall be a minimum of 60 minutes in duration.

[SIP Rule 62-296.410(2)(b)2., F.A.C.; Air Construction Permit No. 0890004-040-AC]

8. D.7. Sulfur Dioxide (SO_2) Emissions (As determined by CEMS data):

a. SO_2 emissions shall not exceed 340 nanograms per joule heat input; nor 0.80 lbs per million Btu derived from liquid fossil fuel or liquid fossil fuel and wood residue; nor 420.0 lbs/hr derived from liquid fossil fuel or liquid fossil fuel and wood residue, and measured as any three-hour period (arithmetic average of three contiguous one-hour periods). The 420.0 lbs/hr limitation allows the facility to avoid NSPS Subpart Db applicability.

[NSPS; 40 CFR 60.43(a)(1); 40 CFR 60.45(g)(2); Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC; Construction Permit No. 0890004-040-AC; Applicant Requested Emission Limit; NSPS Subpart Db Applicability Avoidance]

b. SO_2 emissions shall not exceed 210.0 tons per consecutive 12-month rolling total in order to escape PSD NSR requirements. All valid CEMS data (including startups, shutdowns and malfunctions) shall be used to determine compliance with this limit.

[Rules 62-4.160(2), 62-210.200(PTE), and 62-212.400(2)(g), F.A.C.; Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC]

9. D.8. Nitrogen Oxides (NO_x) Emissions (As determined by CEMS data):

a. NO_x emissions, expressed as NO_2, shall not exceed 129 nanograms per joule heat input; nor 0.30 lbs per million Btu derived from liquid fossil fuel, liquid fossil fuel and wood residue; nor 101.20 lbs/hr, and measured as any three-hour period (arithmetic average of three contiguous one-hour periods). The 101.20 lbs/hr limitation allows the facility to avoid NSPS Subpart Db applicability.

[NSPS; 40 CFR 60.44(a)(2); 40 CFR 60.45(g)(3); Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC; Application No. 0890004-040-AC; Applicant Requested Emission Limit; NSPS Subpart Db Applicability Avoidance; Rule 62-212.400(2)(g), F.A.C.].....

10. D.9. Carbon Monoxide (CO) Emissions (As determined by CEMS data). CO emissions shall not exceed ~~157.5~~ 198.0 lbs/hr, 30-day rolling average; nor, 591.3 tons per consecutive 12-month rolling total. The~~se~~ hourly limit~~s~~ ~~are~~ is based on 0.3 lbs per million Btu heat input (0.25 lbs/MMBtu vendor guarantee). The annual limit is based on applicant requested emission limitation. All valid CEMS data (including startups, shutdowns and malfunctions) shall be used to determine compliance with this limit.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC, Applicant Request Emission Limitation; Air Construction permit No. 0890004-040-AC]

11. D.10. Volatile Organic Compounds (VOC) Emissions (As determined by EPA Method Compliance Testing stated in **Condition D.27).** VOC emissions shall not exceed 0.002 lbs per million Btu heat input; nor ~~1.05 lbs/hr and 3.94 TPY.~~ 1.32 lbs/hr and 4.60 TPY. VOC emissions shall be determined by the average of three runs in accordance with EPA RM 25A. Each run shall be a minimum of 60 minutes in duration.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC and Air Construction permit No. 0890004-040-AC]

12. D.14. **[RESERVED]**~~Spent Sulfite Liquor Sulfur Content. As determined by lab analysis, the sulfur content of the spent sulfite liquor shall not exceed 5.5 percent, by weight.~~

~~[Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC]~~

And Specific Condition No. D.23

D.23. PM Emissions:

a. For the Particulate Matter emissions standard in **Condition D. 6.b.,** EPA Method 5B shall be used to determine the particulate matter concentration after FGD systems.

(1) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). The probe and filter holder heating systems in the sampling train shall be set to provide an average gas temperature of 160 ± 14 °C (320 ± 25 °F).

(2) The emission rate correction factor, integrated or grab sampling and analysis procedure of EPA Method 3B shall be used to determine the O_2 concentration (%O_2). The O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate sample. If the grab sampling procedure is used, the O_2 concentration for the run shall be the arithmetic mean of the sample O_2 sample concentrations at all traverse points.

(3) If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 is used to locate the 12 O_2 traverse points.

b. Acceptable alternative methods and procedures are given in Condition D.33.

[40 CFR 60.46(b)(2); 40 CFR 60.46(a)]

c. For the Particulate Matter emissions standard in **Condition D.6.a.,** the test method for PM shall be EPA Method 5, incorporated and adopted by reference in Chapter 62-297, F.A.C.

d. Test procedures shall meet all applicable requirements of Chapter 62-297, F.A.C.

[Rules 62-296.410(3)(b) & (c), F.A.C.]

e. A performance test shall be conducted on an annual basis, once each federal fiscal year.

~~f. Within 90 days of first firing spent sulfite liquor, the permittee shall conduct an initial performance test while firing spent sulfite liquor at permitted capacity. Thereafter, a performance test while firing spent sulfite liquor shall be conducted on an annual basis, once each federal fiscal year if spent sulfite liquor is fired for 400 hours or more during the federal fiscal year.~~

[Rule 62-297.310(7)(a)4., F.A.C.; Construction Permit No. 0890004-018-AC; Construction Permit No. 0890004-021-AC and Construction Permit No. 0890004-040-AC]

13. **D.52.** Test Reports. The Permittee shall submit test reports to the Compliance Authority as required by Rule 62-296.320(8), F.A.C.

In addition to the information required in Rule 62-297.310(8), F.A.C., each stack test report shall also include the following information: steam production rate (lb/hour), heat input rate (MMBtu/hour), and calculated authorized fuels firing rate (tons/hour or gallons per hour as appropriate).

[Rule 62-297.310(8), F.A.C.; Rule 62-4.070, F.A.C., and Construction Permit No. 0890004-040-AC]

40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. *Hyperlink to 40 CFR 63 Subpart DDDDD-NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*.

14. **D.53.** Pursuant to 40 CFR §§63.7499(e) and 63.7500, and Table 2, this emissions unit is classified as an existing fluidized bed unit designed to burn biomass/bio-based solids subject to the following emission standards:

Pollutant	**Emission Limit**
HCl	0.022 lb/MMBtu
Hg	5.7×10^{-06} lb/MMBtu
CO (for units equipped with a CO CEMS)	310 ppmvd @ 3% O_2 (30-day rolling average)
PM	0.11 lb/MMBtu

The applicable requirements contained in 40 CFR 63, Subpart A General Provision: Table 10 of 40 CFR 63 Subpart DDDDD, which shows the parts of the General Provisions in §§63.1 through 63.15 are applicable. *Hyperlink to 40 CFR 63 Subpart A, General Provisions* and Construction Permit No. 0890004-040-AC.

15. **D.54.** 40 CFR 63, Subpart DDDDD -Compliance Date. The owner or operator shall comply with the applicable emission limitations and operating limitations of 40 CFR 63 Subpart DDDDD no later than the compliance date specified within the Subpart, i.e. January 31, 2016.

[40 CFR 63.7495(b) and Construction Permit No. 0890004-040-AC]

16. Included the necessary changes to Rayonier APPENDIX CAM 2014 version.

CONCLUSION

This project revises Title V air operation permit No. 0890004-041-AV, which was issued on October 10, 2011. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.