Title V Air Operation Permit Renewal
Permit No. 0330042-016-AV

APPLICANT

The applicant for this project is International Paper Company. The applicant's responsible official and mailing address are: Mr. Carl Gunter, Mill Manager, International Paper Company Pensacola Mill, 375 Muscogee Road, Cantonment, Florida 32533.

FACILITY DESCRIPTION

International Paper Company operates the Pensacola Mill, which is located at 375 Muscogee Road in Cantonment, Escambia County, Florida. This facility is a Kraft pulp and paper mill consisting of a wood handling facility, digesters, brown stock washers, oxygen delignification, bleaching facilities, paper machines and associated equipment.

Thermal Oxidizer

The thermal oxidizer is fired by natural gas, has a maximum incineration rate of 1,200 pounds per hour and is equipped with a waste heat recovery system. The system is designed to reduce HAP emissions to 20 ppm at 10% oxygen as required by the MACT (40 CFR 63 subpart S). SO_2 emissions are controlled by a SO_2 scrubber with mist eliminator. The system also uses candle filters to reduce particulate matter and sulfuric acid mist emissions. Staged combustion is used to minimize nitrogen oxide emissions. This emission unit is regulated under 40 CFR 63 subpart S (Cluster Rule/MACT I), National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry; 40 CFR 60 subpart BB, Standards of Performance for Kraft Pulp Mills; and Rules 62-296.404 and 62-296.401, F.A.C., Kraft Pulp Mills and Incinerators.

Recovery Boilers #1 and #2

These are a low odor design recovery boilers manufactured by Babcock and Wilcox. Each unit is a 655 MMBtu/hr heat input boiler designed to burn a maximum of 111,000 pounds per hour of virgin black liquor solids (120,652 pounds per hour as-fired black liquor solids) and recover 42,319 pounds of smelt per hour. Black liquor is normally used for fuel but natural gas, No.2, No. 4, No. 5, and No. 6 fuel oils may be used as a backup fuel at a maximum heat input rate of 572 MMBtu/hr. Each unit has a Koppers dual chamber electrostatic precipitator to control particulate emissions. Total reduced sulfur emissions are monitored with a continuous emission monitor (CEM) system. These emissions units are regulated under Rule 62-296.404, F.A.C., Kraft Pulp Mills and 40 CFR 63 Subpart MM, (Emission Standards for Chemical Recovery Sources).

Power Boiler #3

This boiler was manufactured by Riley and is fueled by wood waste, coal, gas or oil. Rated capacity is 268 MMBtu/hr heat input for 100% coal, 282 MMBtu/hr if fueled by wood waste, or 347 MMBtu/hr if fueled with oil and/or gas. Particulate emissions are controlled by multi-cyclones followed by a venturi wet scrubber manufactured by Neptune Airpol, Inc. Sulfur dioxide emissions are controlled by the sulfur content of the fuels and by addition of sodium hydroxide to scrubber fluid to control pH. The boiler has a CEM for SO_2, NO_x and O_2. A continuously monitored pressure drop has been approved in lieu of a CEM for opacity. This emissions unit is regulated under Rule 62-296.405, F.A.C., Fossil Fuel Steam Generators.

Power Boiler #4

This boiler was manufactured by Foster Wheeler and is fueled by wood waste, coal, gas or oil. Rated capacity is 546 MMBtu/hr heat input for 100% coal or up to 666 MMBtu/hr if fueled with other fuels supplementing coal. Particulate emissions are controlled by multi-cyclones followed by a venturi wet scrubber manufactured by FMC Type TI, model 280K. Sulfur dioxide emissions are controlled by the sulfur content of the fuels and/or by addition of sodium hydroxide to scrubber fluid to control pH. The boiler has a CEM for SO_2, NO_x and O_2. A continuously monitored pressure drop has been approved in lieu of a CEM for opacity. This emissions unit is regulated under Rule 62-296.405, F.A.C., Fossil Fuel Steam Generators.

Power Boiler #5

This is a 195 MMBtu/hr heat input natural gas fired boiler. NO_x emissions are controlled by a combination of flue gas recirculation and low NO_x burners. The boiler was constructed under permit AC17-140962/PSD-FL-126 and later modified under permit AC17-192933/PSD-FL-126A.

Power Boiler #6

This is a 533 MMBtu/hr heat input natural gas and landfill gas fired boiler. NO_x emissions are controlled by a combination of flue gas recirculation and low NOx burners. The boiler was constructed under permit AC17-223343/PSD-FL-200 and replaced power boilers 1 and 2. NO_x emissions are monitored with a CEM system.

Smelt Dissolving Tanks #1 and #2

Each tank is rated to receive a maximum of 42,319 pounds per hour of molten smelt consisting primarily of sodium carbonate, sodium sulfide and sodium sulfate from the recovery boilers. The smelt is dissolved in weak wash to yield green liquor for the slaking process. Particulate matter and reduced sulfur emissions are controlled by a wet venturi scrubber manufactured by Air Pol. These emissions units are regulated under Rule 62-296.404, F.A.C., Kraft Pulp Mills and 40 CFR 63 subpart MM (MACT II), (Emission Standards for Chemical Recovery Sources).

Lime Kiln-Mud Dryer System

A natural gas, and No. 4, No. 5 and No. 6 fuel oil fired Lime Kiln with a maximum operating rate of 20.83 tons per hour of lime as CaO. The kiln also serves as a backup control device for the Non-Condensable Gas (NCG) system. Emissions are controlled by an electrostatic precipitator, which is vented in series to a modified packed column wet scrubber using NaOH as the scrubbing media. Sulfur dioxide emissions are controlled by the sulfur content of the fuel oil (maximum of 1% by weight) and maintaining a minimum scrubber pH of 7.5. Total reduced sulfur compliance is maintained by proper combustion and the scrubber. Total reduced sulfur emissions are monitored with a CEM system. This emissions unit is regulated under Rule 62-296.404, F.A.C. - Kraft Pulp Mills, 40 CFR 63 subpart S - National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry and 40 CFR 63 subpart MM, (Emission Standards for Chemical Recovery Sources).

Tall Oil Processing

A maximum of 22,500 pounds per hour of black liquor soap is treated with sulfuric acid to yield 11,400 pounds per hour of crude tall oil. Resulting TRS gases are vented through a packed scrubber and treated with white liquor. Total reduced sulfur emissions are controlled by maintaining 35 gallon per minute scrubber flow. This emissions unit is regulated under Rule 62-296.404, F.A.C. - Kraft Pulp Mills.

Tail Gas Scrubber, Chlorine Dioxide Generator, Storage

This is a R8/R10 process that uses methanol, sulfuric acid, and sodium chlorate to generate chlorine dioxide. The system produces a maximum of 41.1 tons of ClO_2 per day. Emissions from the ClO_2 generator and three storage tanks are controlled by the white liquor scrubber (tail gas scrubber) with a pH set point of 12. In the event the white liquor scrubber is not functional, the emissions from the storage tanks will be controlled by a two chilled water scrubbers with a maximum temperature set point of 50 degrees Fahrenheit and a minimum flow rate of 25 gallons per minute. This emissions unit was permitted under Construction/PSD Permit AC17-223343/PSD-FL-200.

B-Line Bleach Plant

Emissions from B-Line bleach plant are controlled by a Cl/ClO_2 scrubber. The scrubber uses white liquor to maintain a minimum pH of 10.0. This emission unit is regulated under 40 CFR 63 subpart S, National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry. As part of permit 0330042-012-AC, the A-Line Kamyr continuous digester was modified to allow for a greater softwood pulping rate. The diffusion washer and refiners were modified to improve pulp quality processed by the No. 5 Paper Machine. The O_2 Delignification and bleaching operations were removed, with some of the process units and tanks being reused. The secondary

knotter, rejects drainer, brown stock decker, #1 post oxygen washer (POW), secondary knotter level tank, screen dilution tank, refined reject tank, and pine O_2 blow tank of the current A-Line O_2 delignification process were taken out of service and/or used for other operations. The #1 brown stock decker, screen dilution tank, and pine O_2 blow tank will be reused in the future A-Line operations. The #1 POW was reconfigured to act as a second brown stock decker (#2), the pine O_2 blow tank now serves as a new screen feed tank, the press feed tank serves as a reject refiner feed tank, and the screen dilution tank serves as a cleaner dilution tank in the future. The No. 4 and 6 high density storage tanks of the bleach plant serves as a broke storage tank for the No. 5 Paper Machine and a high density storage tank for bleached pulp from the B-Line, respectively. As part of permit 0330042-012-AC, the B-Line was reconfigured from a hardwood to a softwood pulping line. Specifically, the batch digesters are now equipped with a turpentine recovery system for processing softwood. The O_2 Delignification, brown stock washer systems and bleach plant are now used to process softwood pulp. The bleach plant operates at a reduced level since bleach pulp production decreased. NOTE: The Kamyr Digester is sometimes referred to as the A-Line digester. This is not to be confused with the A-Line Bleach Plant, which no longer exists.

Non-Condensable Gas (NCG) Handling System

The NCG handling system collects non-condensed gases containing total reduced sulfur compounds. These gases are collected from 12 batch digesters processed through two blow tanks, a primary condenser and a secondary condenser; a Kamyr continuous digester processed through three flash tanks, a stripper reboiler, a secondary condenser, a condensate stripper and two sets of multiple effect evaporators. Total reduced sulfur emissions are controlled by combustion in the thermal oxidizer or lime kiln as a backup. This emissions unit is regulated by 40 CFR 63 subpart S, National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry. As part of permit 0330042-012-AC, methanol levels in the condensate are expected to be reduced, with the NCG load to the thermal oxidizer (EU 067) increasing slightly due to the greater production throughput. The No. 1 Steam Stripper remains inactivate.

Nos. 1 and 2 Multiple Effect Evaporator (MEE) Sets

The evaporators are used to concentrate the weak black liquor prior to firing in the recovery furnaces. The off-gas from the evaporators is vented into the NCG system and combusted in the thermal oxidizer or lime kiln as a backup. This emissions unit is regulated by 40 CFR 63 subpart S, National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry.

Lime Slaker

Lime and green liquor react to yield white liquor and lime mud. The maximum operating rate is 20.8 tons of lime as CaO added to green liquor per hour. Particulate emissions are controlled by four water showers in a scrubber manufactured by Dorr-Oliver. This emissions unit is regulated under Rules 62-296.404, F.A.C., Kraft Pulp Mills. Specific Condition M.7. for EUID 046, the Lime Slaker, was removed in this permitting action. This is based on the information provided in 2005 to request a change in the minimum scrubber flow rate that gives reasonable assurance of compliance with the PM limitation and maintains a conservative compliance assurance monitoring indicator, and, the information provided November 9, 2011 documenting technical difficulties in PM testing due to the scrubber having very low and sometimes negative exhaust gas flows in the stack.

Dry Additives, Starch Receiving and Storage (Inactive)

Dry additives are received in bags and are batch handled in a variety of make-down systems. Particulate emissions are controlled by a rotating wet scrubber manufactured by American Air Filter, model W size 12 Roto-Clone. Also, starch is pneumatically loaded from rail cars or trucks to a storage silo. The maximum designed operating rate is 500 pounds of starch loaded to silo per minute. Particulate emissions are controlled by a baghouse filter manufactured by Fuller Company. The alkaline conversion process consists of a starch silo and clay silo. Each unit has a separate baghouse to control emissions. The maximum designed operating rate is 1,500 pounds of starch loaded to silo per minute and 1,500 pounds of clay loaded to silo per minute. This emissions unit is regulated under Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards. The unit is currently not operating but the facility wishes to keep it in the permit in the event it needs to use these dry additives again in the future.

Woodyard Activities

Pine is received as logs and/or chips by rail cars and/or trucks. The logs are debarked and chipped and the chips are classified through screens according to thickness. The chip handling system consists of one fines cyclone. Visible emissions from this system are limited to 5% opacity. The maximum feed rate of pine wood chips to the thickness screening system is 237 tons per hour. This emissions unit is regulated under Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards.–The Woodyard can process approximately 3,025 cords per day. Additional purchased softwood chips and logs will supplement current chip and softwood log operations.

Pulping System

The non-condensable gases (TRS/HAP/VOC) from the system are collected and combusted in the thermal oxidizer (primary NCG control system) or in the lime kiln (back-up NCG control system). This emissions unit is regulated by 40 CFR 63 subpart S, National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry.

Paper Machine Operations

As part of permit 0330042-012-AC, there were several modifications to the No. 5 Paper Machine to allow for the production of linerboard and/or corrugated medium. Modifications occurred to the vacuum section, the dryers and the winder section of the paper machine (the wet end). The modified No. 5 Paper Machine produces approximately 1,843 air-dried tons of unbleached pulp per day (ADTPD). The No. 4 Pulp Dryer was modified to produce approximately 634 ADTPD of bleached softwood pulp. The No. 3 Paper Machine was shut down indefinitely. The mill will not be making modifications to the No. 5 Paper Machine authorized by permit 0330042-015-AC.

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the existing Title V permit for the above referenced facility.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Air Operation Permit effective August 17, 2000
Renewal Title V Air Operation Permit effective October 27, 2006
Application for a Title V Air Operation Permit Renewal received March 16, 2011
Additional Information Request dated April 26, 2011
Additional Information Response received May 23, 2011
Additional Information received November 9, 2011

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 subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) applies to Emissions Units 033 (Power Boiler #3), 037 (Power Boiler #4), 067 (Thermal Oxidizer), 046 (Lime Slaker), Bark Boilers #3 and #4, and the Lime Slaker all control PM emissions with the use of scrubbers and have regulated PM emission limits. The Thermal Oxidizer serves as a control device designed to reduce HAP emissions and emits SO_2 emissions having regulated emissions limits, controlled by a scrubber with mist eliminator and emits NOx emissions having regulated emissions limits, controlled by staged combustion.

PROJECT REVIEW

This project is the issuance of Title V permit renewal 033042-016-AV. This permit renews the facility's Title V Operation permit, 0330042-010-AV, effective October 27, 2006, and incorporates the applicable requirements of air construction permit 0330042-015-AC, effective January 7, 2011, and construction permit 0330042-017-AC, being issued concurrently with this permit renewal, which reduces testing frequency for Boiler No. 5 (currently in back-up status) and the Lime Kiln when burning fuel oil. The mill has converted from a hardwood and softwood facility to a completely softwood facility. This increases the pulp and paper production to a peak daily level of approximately 2,500 ADTUPD. The softwood pulp is used to produce unbleached linerboard and/or corrugated medium on the No. 5 Paper Machine. A portion of the softwood pulp is bleached and pulp is produced on the No. 4 Pulp Dryer. The No. 3 Paper Machine is shut down.

Changes in this permit include removal of No. 1 Condensate Stripper (Emissions Unit 064), removal of permitting notes regarding operating rates during stack and visible emissions (VE) testing for various emissions units, a reduction in the testing frequency for Lime Kiln (EU 028) when not using oil, a reduction in the testing frequency for Power Boiler #5 (EU 002) when not being regularly operated, removal of PM testing for the Lime Slaker (EU 046), re-install in the Tall Oil Processing description a maximum 22,500 lb/hr black liquor soap capacity, removal of the No. 1 cyclone separator and air density separator from the Woodyard (EU 052), removal of the 3,944 tons per day limit from the Woodyard (EU 052), the re-designation of Coal Crushing and Handling (EU's 039 and 040) as unregulated emission units (Facility is now receiving custom-sized coal, reducing the need to crush on-site and dropping fugitive PM emissions from 58 TPY to less than one TPY), and the re-designation of the B-Line #1 Brown Stock Washing Line (EU 070), the B-Line #2 Brown Stock Washing Line (EU 071), the Diffusion Washer (EU 072), the B-Line O_2 Delignification (EU 073), and the Pulping System (EU 069) as regulated emissions unit subject to 40 CFR 63 subpart S - National Emission Standards for Hazardous Air Pollutants (These emissions units were previously listed in Appendix U as unregulated emissions units). The Methanol Storage Tank is no longer subject to any specific regulatory requirements due to changes to 40 CFR 60 subpart Kb, and is added to the facility's list of insignificant emission sources.

POTENTIAL EMISSIONS

Pollutants (tons per year)*	PM	SO_2	TRS	NO_X	CO	VOC
No. 1 Recovery Boiler	282	66.6	14.5	1421.3	206.74	54.27
No. 2 Recovery Boiler	265	66.6	14.5	1421.3	206.74	54.3
No. 3 Power Boiler	118.3	1,410.4	N/A	823.4	N/A	N/A
No. 4 Power Boiler	240.9	2,868.9	N/A	1,673.2	N/A	N/A
No. 5 Power Boiler	N/A	N/A	N/A	85.4	205.9	N/A
No. 6 Power Boiler	11.7	2.2	N/A	140.1	233.5	23.4
No. 1 Smelt Dissolving Tank	75.4	N/A	71.3	N/A	N/A	N/A
No. 2 Smelt Dissolving Tank	77.8	N/A	7.8	N/A	N/A	N/A
Lime Kiln/Mud Dryer	34	28.47	6.4	215.9	29.6	107.3
Thermal Oxidizer	4.4	25.0	2.2	39.9	29.8	4.8
Lime Slaker	7.0	N/A	N/A	N/A	N/A	N/A
No. 1 Cyclone Separator	0.03	N/A	N/A	N/A	N/A	N/A
High Density Separator	0.6	N/A	N/A	N/A	N/A	N/A
Tall Oil Process	N/A	N/A	1.25	N/A	N/A	76.0
TOTAL	**1,121.4**	**5,657.7**	**61.3**	**3,712.0**	**3,909.0**	**1,036.4**

Based on the Title V Revision Permit application received March 16, 2011, this facility is a major source of hazardous air pollutants (HAP).

Other permit changes made as part of this renewal involved use of the new Title-V permit template, use of combined appendices, reformatting, the replacement of TV-6 with new Appendix TV, and the streamlining of EU sections by moving common conditions to the new appendices where applicable.

CONCLUSION

This project renews Title V air operation permit 0330042-010-AV, effective October 27, 2006, and includes the revisions of Title V air operation permit 0330042-014-AV, effective March 16, 2009, changes from air construction permit 0330042-015-AC, effective January 7, 2011, and changes in air construction permit 0330042-017-AC, being issued concurrently with this renewal. The initial Title V air operation permit 0330042-002-AV was effective August 17, 2000 under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.