GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Jeffrey W. Cown, Director

Air Protection Branch
4244 International Parkway
Suite 120
Atlanta, Georgia 30354
404-363-7000

NARRATIVE

TO: Jeng-Hon Su

FROM: Susan Jenkins

DATE: January 30, 2024

Facility Name:	**International Paper Company**
AIRS No.:	089-00074
Location:	Lithonia, GA (DeKalb County)
Application #:	29152
Date of Application:	January 16, 2024

Background Information

International Paper Company (hereinafter "facility") operates a corrugated containerboard manufacturing facility located at 6792 Marbut Road, Lithonia, Georgia. The facility currently operates under Air Quality Permit No. 2653-089-0074-S-03-0 issued on July 24, 2008. In addition, the facility received a "No Permit Required" approvals as summarized in the following table:

Application No.	Purpose	Note(s)
23831	NPR for installation of new die cutters.	NPR for this project issued 5/24/2016 per Georgia Rule 391-3-1-.03(6)(i)3.
26513	NPR for replacement of baler.	NPR for this project issued 4/20/2018 per Georgia Rule 391-3-1-.03(6)(i)3.
27482	NPR for replacement of a robot on the 5107 Hamada flexographic folder-gluer (FFG) machine.	NPR for this project issued 4/1/2020 per Georgia Rule 391-3-1-.03(6)(i)3.
27877	NPR for addition of a box slitter on the 5107 Hamada FFG machine.	NPR for this project issued 4/9/2021 per Georgia Rule 391-3-1-.03(6)(i)3.
28818	NPR for removal of 2444 Ward Rotary Die Cutter (RDC); removal of 5134 Langston FFG machine; Installation of a new EVOL 100 FFG machine.	NPR for this project issued 4/25/2023 per Georgia Rule 391-3-1-.03(6)(i)3.

The first step in constructing a corrugated container is the construction of the corrugated sheet of paperboard. Generally, three layers of paper are used in the construction; the two outer layers are known as *linerboard* and the wavy middle layer is called *medium*. The adhesive used to join the three layers is primarily *corn starch*.

Starch delivered to the facility is stored in a starch silo (P4) equipped with a bin vent filter to control emissions during silo loading. The silo (P4) is filled by large bulk trucks through a piping system on the side of the silo. A dust bag system is connected to the silo (P4) to keep fine dust under proper

control. At the bottom of the silo is an auger that drops the starch into the conveying lines, where it is transferred to the receiver to the starch mixing machine (MIX1). This *starch adhesive* is made primarily from the powdered starch of corn, hot water, and various chemicals for water proofing, speeding the curing, and various other preservative functions. The adhesive is then pumped to the glue rolls on the corrugator (P8).

The corrugator (P8) unwinds the *medium*, which is conditioned with steam produced by one boiler (B1) and run through flute rolls to make the paper wavy. The peaks of the *medium* roll across the glue roll to pick-up adhesive. The first layer of *linerboard* is then brought into contact with the *medium* forming a sheet known as *single face*. The *single face* is run over another glue roll, the peaks (i.e., *flutes*) picking up adhesive and the second layer of *linerboard* is brought into contact with the *corrugated* sheet. Next the sheet travels through a series of hot plates, heated by boiler B1, for drying. The edge of the sheet is trimmed off with the trim sent to the scrap collection system (P5). The sheet is scored or slit as needed and sent to the knife trimmer which cuts it into individual sheets that are stacked and transported to the finishing area.

The FFG machines use flexography and inks, die-cut, glue and fold the sheet into a container shape. The glue and flexographic ink each contain a small percentage of VOCs that are released as fugitives within the plant. The scraps generated by the RDC machine drop onto a small belt that carries the scrap to an entrance of the pneumatic scrap collection system.

Some of the containers produced (typically for use with field packed vegetables) are saturated with wax to impart moisture resistance.

Finished containers are palletized and shipped to customers.

Purpose of Application

The Division received a SIP Permit Application request from the facility on January 22, 2024, assigned Application No. 29152 for the following:

1. Incorporation of exempt-permitted activities per Georgia Rule 391-3-1-.03(6)(i)3. and resetting the cumulative modifications exempt from permitting at 0 tpy for each applicable pollutant.

2. Replace the 5194 Langston FFG (Source Code P9) with a new EVOL 100 FFG (Proposed Source Code P11). Remove Source Code P9.

3. Removal of Existing Condition 7.7 as other similar International Paper facilities in the state do not have requirements to read and record pressure drop readings on the starch silo baghouse.

4. Clarification of Existing Conditions 7.8 and 7.9 as they seem contradictory.

Updated Equipment List

Emission Units				Associated Control Devices	
Process Group	**Source Code**	**Description**	**Installation Date**	**Source Code**	**Description**
--	B1	24.4 MMBtu/hr Boiler fired with natural gas (primary) and distillate fuel oil (backup)	2006	--	--
--	FP1	Fire Pump Engine circa 1966 rated at less than 600 hp	Existing	--	--
--	P4	Starch Silo	Existing	BV1	Bin Vent Filter (Exhausts Outdoors)
--	MIX1	Starch System: Mixing process for water, caustic, *resin*, and starch producing *starch-based adhesive* to be applied in the corrugator. Note that the term *resin* is missing from Section 2.3 of the permit application.	Existing	--	Exhausts Indoors
--	MIX2	Mixing process for ink/pH adjuster and soap based on specific recipes.	Existing	--	Exhausts Indoors
P8	P8	Corrugator	2006	--	Exhausts Indoors
P5	P5	Scrap Collection System with Process Cyclone	2006	BH05	Baghouse which exhausts indoors
P3	- - 2426 5107	***-Remove 2444 Ward RDC Machine*** ***-Remove 5134 Langston FFG Machine*** -Ward RDC -Hamada FFG	 2021 2021	--	Exhausts Indoors
P7	5117	Hamada FFG	2020	--	Exhausts Indoors
~~P9~~ **P11**	-- **P11**	***Remove 5194 Langston FFG*** **-EVOL 100 FFG***	-- **TBD**	--	**Exhausts Indoors**
P10	P10	-EVOL 100 FFG	TBD	--	Exhaust Indoors
PW1	PW1	Parts Washer	Existing	--	Exhaust Indoors

Fuel Burning Equipment

Source Code	Input Heat Capacity (MMBtu/hr)	Description	Installation Date	Construction Date
B1	24.4	Combust natural gas (primary) and distillate fuel-oil (backup)	2006	2006

Emissions Summary

The facility provided an updated summary of the facility-wide potential to emit (PTE) in Appendix B of Application No. 29152. The following table summarizes the basis of the emissions factors used to compute actual

ID No. & Description	Basis for Emissions Factors	Note(s)
B1, Boiler FP1, Fire Pump Engine	AP-42 for Natural Gas and Fuel Oil Combustion	NOx, CO, VOC, SO_2, PM, HAP
P4, Starch Silo	AP-42 Table 9.9.1-1 for uncontrolled PM factors for grain elevators	PM
P5, Scrap Material System Controlled by Cyclone	NCASI-See Note E.1	PM
P8, Corrugator	NCASI- See Note E.2	VOC and HAP Emissions
Inks, adhesives, pH adjuster, and soap usages	-Maximum line speed with 100% coverage of ink; -Max. usage of each material (ink, pH adjuster, adhesive, & soap) is based on Corrugator capacity; and -VOC and HAP content per material (ink, pH adjuster, adhesive, soap)	VOC and HAP Emissions are based on a mass balance approach.
PW1, Parts Washer	Based on Safety Data Sheets -VOC and/or HAP Content; -Material usage	VOC and HAP Emissions are based on a mass balance approach.
MIX1, Glue Batching	N/A	Keep covered during operation. Assume no VOC &/or HAP emissions.
MIX2, Mixing of ink & pH adjuster	N/A	Keep covered during operation. Assume no VOC &/or HAP emissions.

Note	Discussion	
E.1	International Paper-Olympia Container Plant letter to Jennifer DeMay, Engineering Supervisor, WA ORCAA dated October 21, 2021: References *Interim Report on Particulate Testing of Trim and Scrap Handling Cyclones at Corrugating/Converting Plants D & E, June 2020)* Emissions sampling was conducted using EPA Method 201A and 202 in a straight ductwork at a location downstream of the trim cyclone and upstream of a baghouse.	
	Pollutant	lb/ton of scrap
	PM	2.1
	PM_{10}	0.36
	$PM_{2.5}$	0.06

Note	Discussion		
E.2	International Paper-Olympia Container Plant letter to Jennifer DeMay, Engineering Supervisor, WA ORCAA dated October 21, 2021: References *Plant C in NCASI Corrugator Sheet Plant Testing for NMTGOC and Select HAPs-May 2018 Update*. Use the following Emissions Factors and track via recordkeeping the square feet of single wall and square feet of double wall corrugated liner/medium produced per month from P8.		
	Pollutant	Single Wall (lb/MSF)	Double Wall (lb/MSF)
	VOC as C	2.2E-03 or 8.0E-03???	3.5E-03 or 8.0E-03???
	Acetaldehyde	1.7E-04	2.2E-04
	Acrolein	8.2E-05	8.3E-05
	Formaldehyde	1.2E-04	1.6E-04
	Methanol	2.0E-03	3.3E-03
	Propionaldehyde	6.5E-05	1.3E-04

Facility-Wide Emissions
(in tons per year)

Pollutant	Uncontrolled Potential Emissions		
	Before Mod.	After Mod.	Emissions Change
$PM/PM_{10}/PM_{2.5}$	3.0	3.0	0.0
NOx	13.0	13.0	0.0
SO_2	0.34	0.34	0.0
CO	5.79	5.79	0.0
VOC	<25	<25	0.0
Max. Individual HAP	<10	<10	0.0
Total HAP	<25	<25	0.0
Total GHG (if applicable)	15,000	15,000	0.0

Regulatory Applicability

An updated regulatory applicability analysis is presented in this narrative. Georgia Rules (b) and (e) remain as applicable requirements for the facility.

Georgia Rule 391-3-1-.02(2)(w) – "VOC Emissions from Paper Coating": The *roll coating application* of adhesives in the corrugator P8 and the flexographic folder-gluer machines do not distribute the *adhesive* uniformly across the web. Therefore the roll coating application steps **do not** constitute "Paper Coating" per Georgia Rule (w)6.(ii), and therefore Georgia Rule(w) is not an applicable requirement.

Georgia Rule 391-3-1-.02(2)(ff) – "Solvent Metal Cleaning": The facility operates an existing parts washer (PW1) which operates as a "cold cleaner" per Georgia Rule (ff)5.(i). This state rule is applicable to the facility because the facility is located in DeKalb County and has potential VOC emissions which exceed 15 pounds VOC per day. The requirements of Georgia Rule (ff)1. are incorporated in the New Air Permit.

Georgia Rule 391-3-1-.02(2)(mm) – "VOC Emissions from Graphic Arts Systems": The flexographic printing operations in the FFG machines (ID Nos. P3, P7, P10, and P11) apply an ink (mixed with pH adjuster and soap) on containerboards. Georgia Rule (mm) is not an applicable requirement for these flexographic printing operations because the facility-wide VOC emissions are limited to less than 25 tons per year.

Georgia Rule 391-3-1-.02(2)(tt) – "VOC Emissions from Major Sources": The following facility operations are potentially subject to Georgia Rule (tt): (1) boiler (B1); (2) fire pump engine (FP1); and (3) roll coating of adhesives. Georgia Rule (tt) is not an applicable requirement for these operations because the facility-wide VOC emissions are limited to less than 25 tons per year.

Georgia Rule 391-3-1-.02(2)(ccc) – "VOC Emissions from Bulk Mixing Tanks": The facility operates two mixing operations: (1) MIX1 (starch, water, caustic, and resin); and (2) MIX2 (ink, pH adjuster, and soap). Georgia Rule (ccc) is not an applicable requirement for these operations because the facility-wide VOC emissions are limited to less than 25 tons per year.

Georgia Rule 391-3-1-.02(2)(mmm) – "NOx Emissions from Stationary Gas Turbines and Stationary Engines Used to Generate Electricity: The facility operates a fire pump engine that meets the definition of "emergency standby stationary gas turbines and stationary engines" which operates less than 200 hour per year. Therefore, operation of this engine is not subject to Georgia Rule (mmm)1.(i)-(ii).

Boiler with ID No. B1: The facility operates a boiler (B1) that is permitted to combust natural gas and distillate fuel oil with a maximum heat input rating of 24.4 MMBtu/hr. The boiler is subject to the following applicable requirements:

Requirement	Discussion
Georgia Rule (d)	Limits the PM and visible emissions from the boiler.
Georgia Rule (g)	Limits the fuel sulfur content to less than 2.5 weight percent.
Georgia Rule (lll)	Limits the NOx emissions to 30 ppm at 3% oxygen on a dry basis during May 1 through September 30 of each calendar year. Requires the facility to conduct an annual tune-up during March 1 through April 30 according to the *Procedures for Testing and Monitoring of Air Pollutants* (PTM) Section 2.119. The facility is subject to the NOx emissions standard during May 1 through September 30 of each calendar year even during periods of *natural gas curtailment*.
NSPS Dc	Operation of the boiler is subject to NSPS A and Dc because it was constructed after 1989 and has a maximum heat input rating between 10 MMBtu/hr and 100 MMBtu/hr. Limits the fuel sulfur content of the distillate fuel oil to less than 0.5 weight percent.

Requirement	Discussion
Avoidance of 40 CFR 63 Subpart JJJJJJ	The Permittee is required to operate the boiler as a *gas-fired boiler* as defined in 40 CFR 63.11237 to avoid the requirements of operating the boiler as an *oil-fired boiler*.

Permit Conditions

A New Consolidated Air Permit has been prepared to address necessary updates to the facility's existing air permit.

New Condition No.	Existing Condition No.	Modified or Deleted or New?	Discussion
1.1 – 1.5	1.1-1.5	No	No Change
2.1	2.1	Modified	Limits facility-wide VOC emissions to less than or equal to 25.0 tons during any consecutive twelve-month period. Legal citation is added as "Avoidance of Georgia Rule 391-3-1-.02(2)(mm), (tt), & (ccc); Avoidance of Title V".
2.2	2.2	Modified	Limits facility-wide individual/total HAP emissions to less than 10/25 tons during any consecutive twelve-month period. Condition language has been updated.
2.3	2.4	Modified	Georgia Rule (b) condition language has been updated with no change to underlying requirement.
2.4	2.7 2.8	Modified	Georgia Rule (d) condition language has been updated for boiler B1 with no change to underlying requirement.
2.5	2.3	Modified	Georgia Rule (e) condition language has been updated to include those portions of the facility installed prior to 1968.
2.6	N/A	New	Georgia Rule (g) condition language has been updated for fuel-burning sources at the facility with no change to the underlying requirements.
2.7	N/A	New	Added Georgia Rule (ff) requirements for existing Parts Washer (PW1) which operates as a "cold cleaner".

New Condition No.	Existing Condition No.	Modified or Deleted or New?	Discussion
2.8	2.9	No Change	Georgia Rule (lll) condition language has been added with no changes. Note: This NOx emissions limit applies during the combustion of natural gas and distillate fuel oil during the period May 1 through September 30 of each year. NOx emissions from the combustion of distillate fuel oil during the period of May 1 through September 30 during periods of *natural gas curtailment* are subject to Georgia Rule (lll) per enforcement discretion.
2.9	2.5	Modified	Georgia requirement of NSPS Subparts A and Dc for boiler B1.
2.10	2.6	Modified	NSPS Dc requirement regarding the distillate fuel oil sulfur content. Removed reference to residual fuel oil.
2.11	2.10	Modified	Establishes the prohibition of combusting distillate fuel oil except during periods of *natural gas curtailment, gas supply emergencies,* or *periodic testing* for Avoidance of 40 CFR 63 Subpart JJJJJJ. Condition language is taken from Condition 2.5 of Permit No. 2048-011-0012-S-02-0.
3.1, 4.1, and 4.2	3.1, 4.1, and 4.3	No	Carried over. Note: The facility operates a bin vent filter on the starch silo and a baghouse on process cyclone P5.
N/A	4.2	Deleted	Not applicable.
N/A	5.1	Deleted	No monitoring systems are required.
N/A	5.2	Deleted	Operation of a pressure drop indicator on the bin vent filter associated with the starch silo (P4) is not necessary since uncontrolled PM emissions from the starch silo comply with Georgia Rule (e).
5.1	5.5	No Change	Georgia Rule (lll) PTM2.119 requirements are carried over for the boiler (B1).
7.1c,	5.3	Modified	NSPS Dc monitoring
7.1a. & 7.1b.	5.4	Modified	NSPS Dc monitoring
6.1	6.1	No Change	General testing requirements are carried over to the New Permit.
7.1a.	7.8b.	Modified	Establishes the NSPS Dc requirement to maintain monthly natural gas consumption records.
7.1b.	7.8a.	Modified	Establishes the NSPS Dc requirement to maintain monthly distillate fuel oil consumption records.

New Condition No.	Existing Condition No.	Modified or Deleted or New?	Discussion
7.1c.	7.8c.	Modified	Establishes the NSPS Dc recordkeeping requirement to maintain distillate fuel oil supplier certifications which contain the specified items. Removed reference to residual fuel oil since the facility is not permitted for said fuel combustion.
7.1d. & e.	N/A	New	Establishes the recordkeeping requirements associated with the combustion of distillate fuel oil during periods of *natural gas curtailment, supply emergencies,* or *periods of testing, maintenance,* or operator training. Records for determining if the operation of the boiler (B1) still complies with the requirements of 2.11. Records for determining if the operation of the boiler (B1) is during May 1 through September 30 on distillate fuel oil complies with Georgia Rule (lll) and any enforcement discretion.
7.2a. 7.2b.	7.9	Modified	Clarifies the reporting requirements of NSPS Dc.
7.2c.	N/A	New	Clarifies the reporting requirements for verifying compliance with Georgia Rule (lll) and Avoidance of 40 CFR 63 Subpart JJJJJJ.
7.2d.	N/A	Modified	Clarifies the reporting requirements of NSPS Dc.
7.3a.	7.1	Modified	Updated language for activity factor recordkeeping for computing actual VOC emissions using a mass balance approach.
7.3b 7.3c.	NA	New	Establishes activity factor recordkeeping for computing actual VOC emissions from boiler B1.
7.3d.	N/A	New	Establishes the activity factor recordkeeping for computing actual VOC emissions from the fire pump engine (FP1).
7.3e. 7.3f.	N/A	New	Establishes the activity factor recordkeeping for computing actual VOC emissions from Corrugator P8.
7.4	N/A	New	Requires computation of actual VOC emissions from the operation of the boiler (B1) while combusting natural gas and/or distillate fuel oil.
7.5	N/A	New	Requires computation of actual VOC emissions from the operation of the corrugator using NCASI emissions factors.
7.6	N/A	New	Requires computation of actual VOC emissions from the operation of the fire pump engine (FP1) while combusting fuel.

New Condition No.	Existing Condition No.	Modified or Deleted or New?	Discussion
7.7	7.2	New	Requires computation of actual VOC emissions from the facility (excluding boiler, corrugator, and fire pump) using a mass-balance approach.
7.8 7.9	7.2 7.3	Modified	Requires computation of monthly and consecutive twelve-month actual VOC emissions from the facility.
7.10a.	7.4	Modified	Updated language for activity factor recordkeeping for computing actual individual HAP emissions using a mass balance approach.
7.11	N/A	New	Establishes activity factor recordkeeping for computing actual individual HAP emissions from boiler B1.
7.12	N/A	New	Requires computation of actual individual HAP emissions from the operation of the corrugator using NCASI emissions factors.
7.13	N/A	New	Requires computation of actual individual HAP emissions from the operation of the fire pump engine (FP1) while combusting fuel.
7.14	7.5	New	Requires computation of actual individual HAP emissions from the facility (excluding boiler, corrugator, and fire pump) using a mass-balance approach.
7.15 7.16	7.5 7.6	Modified	Requires computation of monthly and consecutive twelve-month actual individual and total HAP emissions from the facility.
N/A	7.7	Deleted	Pertains to maintenance of pressure drop reading records for the bin vent filter serving silo P4. Operation of the bin vent filter is not necessary for compliance with Georgia Rule (e) and the monitoring has been deleted, as requested by the facility.
N/A	7.10 7.11 7.12	Deleted	Air pollution control equipment operation is not necessary.
8.1	8.1	No Change	Special Condition
8.2	8.3	Modified	Updated
8.3	8.2	Modified	Special Condition; the revoked permit number is updated.

Toxic Impact Assessment

The facility evaluated the need to develop and submit a Georgia Air Toxics Guideline ("Guideline") compliance determination. Toxic air pollutants (TAPs) are emitted from the following facility operations: (1) boiler (B1) (which exhausts through an unobstructed vertical stack); (2) mixing operations (MIX1 & MIX2) which exhausts indoors; (3) corrugator (P8) which exhausts indoors; (4) FFG Machines (P3, P7, P10, & P11) which exhausts indoors. No potential increase in TAP emissions to the outdoor atmosphere is anticipated based on the proposed project. Therefore, a compliance demonstration with the Guideline is not necessary.

Summary & Recommendations

The facility submitted Application No. 29152 for the following: (1) Incorporate all exempt-permitted changes not yet incorporated; (2) Removal of the 5194 Langston FFG; (3) Removal of P9; and (4) construction and operation of an EVOL 100 FFG as part of new ID No. P11. Potential emissions are not anticipated to increase based on the proposed project. Therefore, no public advisory was issued. The Division's Stationary Source Compliance Program will remain responsible for inspection and complaint investigations.

Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//