

Facility Name: **SNF – Riceboro**

City: Riceboro

County: Liberty

AIRS #: 04-13-179-00011

Application #: 748202

Date SIP Application Received: May 24, 2023

Date Title V Application Received: May 24, 2023

Permit No: 2899-179-0011-V-04-3

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Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public comment period and EPA review process will be described in an addendum to this narrative.

I. Facility Description**A. Existing Permits**

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Description
2899-179-0011-V-04-0	September 7, 2022	Title V Renewal
2899-179-0011-V-04-1	December 8, 2022	Installation and operation of a catalyst recovery unit and associated storage tanks for the Flocryl Acrylates Batch (North) and Continuous (South and AD6) Plants; modification of the minimum allowable methanol percentage in the composition of the alcohol co-product permitted to be used as fuel in Boilers B203, B204, and B205.
2899-179-0011-V-04-2	February 28, 2023	Modification of existing permitted Liquids Line 13 (LQ13) and installation of new Liquids Line 14 (LQ14) for the Phase V Chemtall Plant.

B. Regulatory Status**1. PSD/NSR/RACT**

The facility is classified as one of the 28 named listed source categories under 40 CFR 52.21 which means the PSD/NSR major source threshold for *regulated NSR pollutants* is 100 tons per year. SNF is classified as an existing major Title I site for volatile organic compounds (VOC), nitrogen oxides (NO_x), and carbon monoxide (CO).

SNF operates with the following PSD Avoidance limits:

Table 2: PSD Avoidance Limits

Plant	Condition No.	Pollutant	Limit
Chemtall/Flocryl Chloromethylation Plant	3.2.1	VOC	The Permittee shall not discharge or cause the discharge into the atmosphere from Chloromethylation Lines 1 through 3 and 6 through 8 (Source Codes CM1 through CM3 and CM6 through CM8), emissions of VOC in an amount exceeding 41.5 tons during any consecutive 12-month period. The emissions limit includes fugitive process emissions.
	3.2.10	VOC	The Permittee shall not produce more than 262,800 tons of IPA-dispersants in Liquids Product Lines 1 through 10 (Source Codes LQ01 through LQ10) during any consecutive 12-month period.

	3.2.11	SO ₂	The Permittee shall not discharge into the atmosphere from Liquids Product Lines 1 through 10 (Source Codes LQ01 through LQ10) emissions of sulfur dioxide in amount equal to or exceeding 40 tons during any consecutive 12-month period.
	3.2.13	VOC	The Permittee shall not produce IPA-dispersants in Liquids Product Line 11 or 12 (Source Codes LQ11 and LQ12).
	3.2.15	VOC	The Permittee shall not produce IPA-dispersants in Liquids Product Line 13 (Source Code LQ13).

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓			✓
PM ₁₀	✓			✓
PM _{2.5}	✓			✓
SO ₂	✓			✓
VOC	✓	✓		
NO _x	✓	✓		
CO	✓	✓		
Individual HAP	✓	✓		
Total HAPs	✓	✓		

II. Proposed Modification

A. Description of Modification

SNF is requesting the following modifications:

- Change the designation for existing batch and continuous CM plant lines from CM1, CM2, CM3, CM6, CM7, and CM8 to R1, R2, R5, QT1, QT2, and QT3, respectively, for consistency with plant terminology.
- Permit a new continuous chloromethylation (CM) plant line (QT4) at Flocryl. This plant will produce cationic monomer products that are later used in other processes at Chemtall or sold as products. The applicable equipment associated with this plant will vent to existing control/recovery equipment.
- Replace the existing 8,000 gal dimethyl sulfate storage tank (TDMS) with a 5,000 gal tank and include an activated carbon adsorber for odor control.

- Revise capacity of existing permitted Flocryl Acrylates continuous plant thermal oxidizer CT02 from 2.5 to 2.6 MMBtu/hr to reflect the potential maximum capacity of the burner. There are no physical modification bring made to the thermal oxidizer.
- Permit Flocryl Acrylates Continuous (South) plant catalyst make-up surge control vessel (T-28B) to vent to atmosphere rather than thermal oxidizer CT01 and/or CT02.
- Incorporate the boiler performance test waiver for Flocryl Acrylates boiler B203, B204, and B205 (Equipment Group BLRS5). The boilers are currently permitted to combust either natural gas or alcohol co-product and must demonstrate compliance with Boiler MACT through performance testing and/or fuel analyses when combusting alcohol co-product. Performance tests results for one boiler are expected to be representative of the results for the other two boilers as they are all identical and combust alcohol co-product from the same processes. SNF submitted a request for and EPD approved an alternative testing schedule pursuant to 40 CFR 63.7(e)(2)(iv) and (h)(2), in which each boiler will be tested initially once they start combusting alcohol co-product. Subsequent testing will take place on a rotating schedule. The facility requests Conditions 4.2.21 through 4.2.23 be modified to reflect this change.
- Change the designation for Flocryl Acrylates boilers B203, B204, and B205 to B360A, B360B, and B360C, respectively, for consistency with plant terminology.
- Group the Mannich plant and NMA production equipment as one source referred to as the “Solutions” plant. This will allow for flexibility to increase the production and/or types of products produced in the individual equipment associated with this plant without increasing total production permitted.
- Include emissions inadvertently left out of previous permit applications for existing noncontact cooling towers.
- Modify and install various insignificant activities and equipment, including a new Liquids line(s) and scrubber, emergency generators, fire pumps, process and storage tanks, and non-routine tank and equipment clean outs.
- Install a diesel fuel-fired generator (GT29) for Flocryl Acrylates AD6 operations and a diesel fuel-fired generator (GT30) for Flocryl CM Plant operations.

Additionally, the facility requests the following changes:

- Revision of wording in Condition 4.2.19 to match Boiler MACT language.
- Revision of Section 1.1 and 1.2 of the permit to correct the name of the facility from “Flocryl, LLC” to “Flocryl LLC.”
- Incorporate the off-permit changes from Application Nos. 28461, 28517, and 28732.

B. Emissions Change

Proposed emissions changes were calculated based on AP-42 and vendor emission factors and are summarized in the table below. All emissions are expected to remain below PSD thresholds. Detailed calculations may be found in Appendix C of Application No. 748202.

Table 4. Potential Project Emissions

Source	Proposed Emissions Increases (tons per year)						
	VOC	NO _x	CO	PM	PM ₁₀	PM _{2.5}	SO ₂
Potential-to-Emit: Current Project and Off Permit Changes Incorporated into Application ¹							
Solutions Plant ²	1.57	-	-	-	-	-	3.14
CM Plant Line QT4 and Fugitives	9.24	-	-	-	-	-	-
DMS Tank	0.00	-	-	-	-	-	-
Flocryl Cont. South Process Tank T-28	1.26	-	-	-	-	-	-
Thermal Oxidizer CT02	0.06	1.12	0.94	0.08	0.08	0.08	0.01
Cooling Towers Group CTWR	-	-	-	1.23	1.23	1.23	-
Catalyst Improvement Process and Fugitives	0.16	-	-	-	-	-	-
AD6 MA/DMOH Railcar Unloading	0.42	-	-	-	-	-	-
AD6 Catalyst Inhibitor Tanks	2.81	-	-	-	-	-	-
Liquids Lines Associated w/Scr CE10	0.09	-	-	-	-	-	-
Fuel Tanks/Generators/Fire Pumps ³	0.15	4.33	0.52	0.11	0.11	0.11	0.16
Cooling Towers (Insignificant Sources)	-	-	-	1.36	1.36	1.36	-
Non-routine tank equipment cleanouts	1.00	-	-	-	-	-	-
Total PTE:	16.75	5.45	1.45	2.78	2.78	2.78	3.30
Potential-to-Emit: Potentially Related Projects within the Past 3 Years ⁴							
Flocryl Acrylates AD6 Continuous Plant ⁵	16.54	24.26	22.26	6.41	6.41	6.41	1.27
Flocryl Acrylates Catalyst Recovery	5.60	-	-	-	-	-	-
Total Increases⁶							
Total Permitted Emissions Increase:	33.29	29.7	23.7	9.2	9.2	9.2	4.6
PSD Significant Threshold:	40	40	100	25	15	10	40
Above PSD Significant Thresholds?	No	No	No	No	No	No	No

Notes

- HAP emissions not included since there are no PSD significant thresholds for HAPs.

1 – Although some of the projects in this section are separate business decisions, for simplicity, emissions were combined when determining whether there was a significant emissions increase.

2 – Although not all sources at the Solutions Plant are being modified in this application, since the individual sources are requested to be grouped, assume the proposed emission increases are the PTE for the entire group.

3 – Includes new and/or modified emergency generators (GT28-GT31), fire pumps (FT03-FT05), and diesel fuel storage tanks (GT28-DES and FT03-DES through FT05-DES).

4 – The permitted Flocryl Acrylates Continuous (AD6) Plant is related to projects involving the AD6 Plant and CM Plant Line QT4.

5 – Does not include the PTE for sources included in the current project.

6 – To be conservative, baseline/historical actual emissions were not estimated.

Toxic Impact Assessment

A toxic modeling analysis was performed for facility-wide emissions associated with these modifications. Emissions for all constituents except chlorine were shown to decrease. A dispersion modeling analysis was conducted to determine the 15-minute and 24-hour maximum concentrations of chlorine from the facility for comparison to the applicable AAC. As summarized in the table below, side-wide emissions of chlorine were determined to be below the applicable AACs. Detailed calculations may be found in Appendix F of Application No 748202.

Table 5. Chlorine Modeling Results

TAP	Averaging Period	AAC ($\mu\text{g}/\text{m}^3$)	Max Modeled Conc. ($\mu\text{g}/\text{m}^3$)	Percent of AAC
Chlorine	24-hr	3.6	3.220	89.44%
	15-min	300	18.957	6.32%

C. PSD/NSR Applicability

The SNF-Riceboro site is considered an existing major source under PSD. Potential emissions associated with the projects in this application are expected to be less than PSD thresholds; therefore, PSD is not triggered.

III. Facility Wide Requirements

None applicable.

IV. Regulated Equipment Requirements

A. Overall Facility Process Description

FLOCRYL ACRYLAMIDE PLANT

The Flocryl Acrylamide Plant uses a biocatalyst to produce acrylamide. There are four permitted acrylamide lines/trains. The raw materials for the process include acrylonitrile, catalyst slurry, acrylic acid, and sodium hydroxide.

Reaction, Catalyst Separation, and Product Filtration

Catalyst, acrylonitrile, dilute sodium acrylate solution (made by combining acrylic acid and sodium hydroxide), and water are continuously fed to the reactor. Sodium hydroxide is also added as needed to maintain proper pH. The reactor effluent containing aqueous acrylamide along with trace acrylonitrile and spent catalyst is discharged to the effluent reactor finishing and receiver tanks. Dilute acrylic acid may be used to pH adjust the effluent.

Catalyst may be separated from the effluent prior to storage. Waste catalyst particles are disposed off-site and the liquid is returned to the process. The liquid separated from the catalyst is either returned to the reactor or sent to the unfiltered acrylamide tanks or product receivers.

The vents from the reactor, effluent reactor tanks, unfiltered acrylamide tanks, and product receivers are routed to scrubber systems.

The product from the reactor lines is stored in the acrylamide product storage tanks. The acrylamide product storage tanks are vented to a scrubber.

Insignificant Sources/Activities

Insignificant sources are located throughout the acrylamide plant and include maintenance operations such as welding and machining, laboratory hoods, and cooling tower water systems. In addition, there are several processes and storage tanks throughout the facility that are insignificant sources due to low emission levels.

FLOCRYL ACRYLATES PLANT

The Flocryl Acrylates facility produces water treatment intermediate chemicals, primarily dimethylaminoethylacrylate (ADAM) and dimethylaminoethylmethacrylate (MADAM). The facility is permitted for four batch processing trains, three batch alcohol recovery areas, and two continuous plants. The facility also contains boilers, as well as other related support equipment.

Raw Material Handling and Storage

Raw materials are received by rail or by truck and are stored in storage tanks. Major raw materials include methyl acrylate (MA), methyl methacrylate (MMA), dimethylaminoethanol (DMOH), and hexane.

Batch Process

The reaction step is a batch transesterification with a reactant ester (MA or MMA) reacting with a reactant alcohol (DMOH) to produce product ester (ADAM or MADAM) plus an alcohol co-product (methanol). The batch lines also include a product distillation step and catalyst recovery. Alcohol co-product is recovered in three permitted alcohol recovery areas (one of the areas is shared with the Acrylates AD6 continuous process). The four existing batch trains are capable of producing both ADAM and MADAM. Emissions from the batch process as well as associated process tanks and storage tanks vent to a thermal oxidizer.

Continuous Process

The reaction step is a continuous transesterification with a reactant ester (MA/MMA) reacting with a reactant alcohol (DMOH) to produce the product ester (ADAM or MADAM) and an alcohol co-product (methanol). The product distillation step consists of separation steps in series followed by two permitted alcohol recovery processes, one of which is shared with the batch process. Emissions from the continuous process as well as associated process tanks and storage tanks vent to a thermal oxidizer.

Boilers

Other significant emission sources include eight existing natural gas-fired boilers used to supply process steam for heating. Three additional boilers are planned to be installed. The boilers have the capability of burning alcohol co-product and several boilers can burn propane for back-up, as necessary.

Insignificant Sources/Activities

Insignificant sources are located throughout the Flocryl Acrylates facility and include maintenance operations such as welding and machining, laboratory hoods, and emergency generators. In addition, there are several processes and storage tanks throughout the facility that are insignificant sources due to low emissions.

FLOCRYL CHLOROMETHYLATION PLANT

The chloromethylation plant produces several classes of cationic monomer products that are later used in the emulsion and powder plants or are sold as products. The facility is permitted to operate three batch lines and three continuous lines. The emissions from all but one batch line vent to a cryogenic condenser recovery unit and/or incinerator and scrubber. There is also one back-up incinerator and scrubber or one backup cryogenic condenser recovery unit.

Raw Material Storage and Handling

Raw materials are received by rail, or if they are received from the adjacent Flocryl Acrylates facilities, they are pumped directly to the CM Plant's storage tanks. Major raw materials include methyl chloride, dimethyl sulfate, dimethylaminoethyl acrylate (ADAM), and dimethylaminoethyl methacrylate (MADAM). Other raw materials stored in tanks include aliphatic oils and water. In addition, several raw materials are also received in bags, drums and/or totes.

CHEMTALL PLANT

Chemtall Incorporated produces water treatment chemicals. The facility is permitted for emulsion plants, powder plants, liquids product lines, solutions product lines, copolymer drum drying process lines, a surfactant manufacturing process, an acrylates polymer process, and miscellaneous solution/polymer processes. The facility also contains boilers, cooling towers, and other related support equipment.

Raw Material and Product Storage and Handling

Raw materials are received by rail or by truck, or if they are received from the adjacent Flocryl facilities, they are pumped directly to Chemtall's storage tanks. Major raw materials include acrylic acid, acrylamide, dimethylamine, and formaldehyde. Other raw materials stored in tanks include surfactants, aliphatic oils, ammonium hydroxide, caustic, nitrogen, and water. In addition, several raw materials are also received in bags, drums and/or totes.

Products include emulsified polyacrylamide polymers that are stored in tanks. Polyacrylamide powder products are stored in super sacks and/or bags.

Emulsion Plants

Emulsified cationic, anionic, and nonionic polyacrylamide polymers are produced in the emulsion plant. In addition, the emulsion plant equipment is used to produce a variety of solution polymers, including dispersants, dry strength polymers, and wet strength polymers. These materials may be produced in any of the emulsion plant equipment. The equipment is also permitted to produce concentrated emulsions. The emulsion plant uses a number of scrubbers for emission control.

Powder Plants

The powder plants produce polyacrylamide powder flocculants. There are a total of ten existing production lines and one permitted line that has not been installed. Particulate matter is controlled by baghouses or dust collectors. In addition, 2-acrylamido-2-methylpropane sulfonic acid (AMPS) solids handling equipment is operated at the powder plants. This equipment vents to a process-related solids recovery scrubber.

Liquid Product Lines

The facility is permitted to operate thirteen liquids product lines. In addition to emulsion polymers and solution polymer products, liquids lines are capable of producing the range of products that may be produced in the emulsion plant equipment, including dispersants (processed with either water or isopropanol), dry strength polymers, and wet strength polymers. Emissions from the areas are controlled by scrubbers.

Solutions Plant

Mannich polymer, in addition to wet strength polymers, dispersants, dry strength polymers, and n-methylolacrylamide (NMA) can be produced in the plant. Emissions from the reactors and the storage tanks and truck loading are vented to scrubbers.

Drum Drying Process

The copolymer drum drying process and related equipment consists of six lines to “dry” copolymer produced in the emulsion/liquid product lines or Solutions area. Product recovery dust collectors control particulate emissions from the lines.

Spray Dryer

The spray dryer is utilized to remove moisture from plant wastewaters including, but not limited to, washwater and washwater evaporator concentrate. The spray dryer receives wastewater from various parts of the plant. Particulate matter emissions are controlled by a baghouse.

Acrylates Polymer

The acrylates polymer process will involve reaction and stripping of acrylates. The process will vent to a thermal oxidizer.

Boilers

Other significant emission sources include six existing natural gas-fired boilers used to supply process steam for heating. Two additional boilers are planned to be installed. Several of the boilers have the capability of burning propane for back-up, as necessary.

Insignificant Sources/Activities

Insignificant sources are located throughout the Chemtall facility and include maintenance operations such as welding and machining, laboratory hoods, emergency generators, and cooling tower water systems. In addition, there are several processes and storage tanks throughout the facility that are insignificant sources due to low emissions.

B. Equipment List for the Process

SNF has requested the following changes associated with the modifications described above:

Table 6: Revised Emission Units

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
FLOCRYL ACRYLATES CONTINUOUS PLANT				
FLOC – Flocryl Acrylates Continuous Plant (South)				
T-27	Recycle Catalyst Surge Control Vessel	40 CFR 63 Subpart FFFF ⁴	CT01 CT02	Thermal Oxidizer
T-28B	Catalyst Make-Up Surge Control Vessel			
T-28B	Catalyst Make-Up Surge Control Vessel	40 CFR 63 Subpart FFFF	None	None
FLOCRYL CHLOROMETHYLATION (CM) PLANT				
R1CM1 R2CM2	Chloromethylation Lines 1 and 2 (Batch)	40 CFR 63 Subpart FFFF ¹ 391-3-1-.02(2)(b) 391-3-1-.02(e)	CC01 CC02 CMI2 CMS2 CMI1 CMS1	Cryogenic Condenser Recovery Unit** Cryogenic Condenser Recovery Unit Incinerator Scrubber Incinerator*** Scrubber***
R5CM3	Chloromethylation Line 3 5 (Batch)	40 CFR 63 Subpart FFFF ² 391-3-1-.02(2)(b) 391-3-1-.02(e)	None	None
QT1CM6 QT2CM7 QT3CM8 QT4	Chloromethylation Lines 6, 7, and 8 QT1 through QT4 (Continuous)	40 CFR 63 Subpart FFFF ¹ 391-3-1-.02(2)(b) 391-3-1-.02(e)	CC01 CC02 CMI2 CMS2 CMI1 CMS1	Cryogenic Condenser Recovery Unit** Cryogenic Condenser Recovery Unit Incinerator Scrubber Incinerator*** Scrubber***
CHEMTALL PLANT				
SOLMAN – Solutions Mannich Plant				
SOL MAN2 MAN4 MPT1 WSB1 WSB2 WSB3 MAN7 MAN8 MT03	Solutions Plant Liquids Product Reactor 2 Liquids Product Reactor 4 Liquids Product Prep Tank PT1 Mannich/Liquids Reactor WSB1 Mannich/Liquids Reactor WSB2 Emulsion Reactor WSB3 Liquids Reactor MAN7 Liquids Reactor MAN8 Emulsion Mix Tank (MT03)	40 CFR 63 Subpart FFFF ²	SC2	Packed-Bed Scrubber
N/a	Cooling Tower System	40 CFR 63 Subpart FFFF	None	None
RNMA – NMA Production				

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
RNMA	NMA Reactor	40 CFR 63 Subpart FFFF ²	SC2	Packed Bed Scrubber
OTHER				
Other				
TDMS	Dimethyl Sulfate Tank	40 CFR 63 Subpart FFFF ²	None CB1	None Activated Carbon Adsorber
BLRS5 – Boilers				
B360A2 03	Flocryl Boiler 203 360A	40 CFR 63 Subpart DDDDD	None	None
B360B2 04	Flocryl Boiler 204 360B	40 CFR 60 Subpart Dc		
B360C2 05	Flocryl Boiler 205 360C	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)		

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards are intended as a compliance tool and may not be definitive.

¹Group 1 source. ²Group 2 source. ³Group 1 source for MMA. Group 2 source for MA, but controlled at all times. ⁴Not subject to 40 CFR 63 Subpart FFFF emission controls, but voluntarily controlled at all times. ⁵If decanter bottoms are transferred offsite for disposal, the decanter bottoms will be considered a Group 1 process wastewater and the trailers, along with T300, T620, and/or T22 will be defined as MON Rule wastewater containers.

**Offline backup to Cryogenic Condenser Recovery Unit CC02.

*** CMI1/CMS1 will be removed once Cryogenic Condenser Recovery Unit CC02 is installed.

BOLDED Text – new names based on consistency with plant terminology or new equipment.

C. Equipment & Rule Applicability

40 CFR 60, Subpart Kb – NSPS of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Storage tanks with a capacity between 19,813 and 39,891 gallons and containing volatile organic liquids with a vapor pressure greater than or equal to 15.0 kPa (2.18 psia) or storage tanks with a capacity greater than 39,891 gallons and containing volatile organic liquids with a vapor pressure greater than or equal to 3.5 kPa (0.51 psia) that were constructed or modified after June 23, 1984 are subject to this standard. Pressure vessels operated above 204.9 kPa (29.7 psia) and process tanks, including surge control vessels and bottoms receivers, are not subject to this standard. The applicability of this standard to the proposed new storage tanks is as follows.

- The capacity of methyl acrylate tanks T50A and T50B (as addressed in Off-Permit Change Application No. 28732) are each greater than 39,981 gallons and the maximum vapor pressures of the tanks are greater than 0.51 psia; therefore, these tanks are subject to Subpart Kb. The tanks are vented to thermal oxidizer CT01 and/or CT02, which will provide a VOC control efficiency of 95% or better. Visual inspections and monitoring will be performed on the closed vent system per 40 CFR 60.485(b) and 40 CFR 60.112b(a)(3).
- The capacity of DMOH tanks T040A and T040B (as addressed in Off-Permit Change Application No. 28732) are each greater than 39,981 gallons; however, the maximum vapor pressure is less than 0.51 psia. Therefore, these tanks are not subject to Subpart Kb.
- The capacity of dimethyl sulfate storage tank TDMS and the propionaldehyde tanks will each be less than 19,813 gallons and therefore not subject to Subpart Kb.

- Methyl chloride tank MCL4 is a pressure tank and therefore not subject to Subpart Kb.
- Vapor pressure of the liquids product tanks will be negligible; therefore these tanks are not subject to Subpart Kb.

Subpart III – NSPS for Stationary Compression Ignition Internal Combustion Engines

The new/replacement emergency generators and fire pumps (GT26, GT29, GT30, FT03, FT04, FT05) are subject to this subpart and will meet the following requirements:

- For emergency engines, the equipment will meet the emission limitations per 40 CFR 60.4202.
- Diesel-fuel used will meet the standards as required by 40 CFR 60.4207.
- Each engine will be equipped prior to startup of the engine with a non-resettable hour meter per 40 CFR 60.4209(a).
- The equipment will be operated per manufacturer written instructions or procedures for operation and maintenance as required by 40 CFR 60.4211(a).
- The equipment will be operated less than 100 hours per year for maintenance checks and readiness checks per 40 CFR 60.4211(f).
- Per 40 CFR 60.4214(b), no initial notification is required as they are operated as emergency stationary ICE.

40 CFR 63 Subparts G and H – Hazardous Organic NESHAP (HON) Rule

The Acrylamide Plant is the only HON Rule source addressed by this permit application. Regulatory requirements for emissions from the catalyst improvement process are addressed below:

- PA storage tanks: The purpose of feed tanks AM1-CS-PLD, AM2-CS-PLD, and AM3-CS-PLD will be for storage and transfer of propionaldehyde to the acrylamide reactor. The capacity of each tank is less than 38 cubic meters (10,039 gal). Therefore, they do not meet the definition of a storage vessel per 40 CFR 63.101(b) and will not be subject to storage vessel requirements under Subpart G.
- Equipment leak fugitives: Leak detection and repair (LDAR) requirements for new equipment will be addressed by following the HON Rule LDAR requirements in 40 CFR 63 Subpart H.
- Cooling towers: These are defined as HON Rule heat exchange systems; however, the intervening cooling fluid contains less than 5 percent by weight of a listed Table 4 HAP. Therefore, they are not subject to regulatory requirements.

There will be no changes to the Group 2 status for process vents and wastewater.

40 CFR 63 Subpart FFFF – Miscellaneous Organic NESHAP (MON) Rule

CM Plant Line QT4:

The facility is considered an existing affected source since construction occurred before April 4, 2002. CM Plant Line QT4 will have controlled emissions less than major source thresholds and will be subject to the MON rule. QT4 will vent through a common header that includes emissions from installed continuous lines QT1, QT2, and QT3 and batch lines R1 and R2. The process vent is classified as a MON Rule Group 1 batch process vent, which will route to one or more of the following control/recovery devices: Cryogenic Units CC01 and CC02

CM Plant Inhibitor Preparation Tank (QT4 CP1-IB)

This process tank does not process materials with HAPs and is not defined as a MON Rule batch process vent (BPV); therefore it is not subject to the MON Rule.

Acrylates AD6 plant liquids catalyst and inhibitor process tanks (T400, T410, T420)

These tanks are defined as MON Rule process tanks and are potentially subject to the MON Rule BPV requirements per 40 CFR 63.2550(i). Uncontrolled HAP emissions from the catalyst and inhibitor tanks are less than 200 pounds per year and the HAP concentration in the inhibitor tanks is less than 50 ppmv. Therefore, these tanks are not regulated as MON Rule BPVs per §63.2550(i)(8) and no MON Rule requirements apply.

Acrylates AD6 plant surge control vessels (T060, T070, T080) and Acrylates South plant surge control vessel (T-28B)

Per §63.2450(r), surge control vessels must meet the emission limitations in MON Rule Table 4 for Group 1 storage tanks if the surge vessels or bottoms receivers meet the capacity and vapor pressure thresholds for Group 1 storage tanks. Tank T080 does not meet these thresholds and is not subject to MON. Tanks T060 and T070 either do not contain HAPs or contain HAPs as impurities, and they do not meet the capacity and vapor pressure thresholds for Group 1 storage tanks; therefore, they are not subject to MON. Tank T-28B does not meet the capacity threshold for Group 1 storage tanks and is not subject to MON.

DMOH and methyl acrylate tanks (T040A, T040B, T50A, T50B) for AD6 plant

These tanks either do not store HAPs or store HAPs as impurities and are not subject to MON. Tanks T50A and T50B vent to thermal oxidizer CT01 and/or CT02, which complies with 40 CFR 60 Subpart Kb requirements.

Solutions Plant

The equipment not designated as insignificant at this plant use materials with HAPs and vent to Scrubber SC2. The combined vent to SC2 is defined as a MON Rule Group 2 BPV and will remain classified as a Group 2 BPV after the modifications as outlined in Application No. 748202.

Liquids Lines associated with Scrubber CE10

These lines will use materials with HAPs to vent to Scrubber CE10. The uncontrolled HAP emissions from the vent will be less than 200 lb/yr. The vent will not be regulated as a MON Rule BPV per 40 CFR 63.2550(i)(8).

Dimethyl sulfate storage tank TDMS

The replacement storage tank will not meet the capacity or vapor pressure threshold for Group 1 storage tanks; therefore, it will be classified as a Group 2 MON Rule tank.

Cooling Towers

These are defined as MON Rule heat exchange systems. The Flocryl Acrylates systems are the only units that contain a process fluid greater than or equal to 5% by weight of a listed MON Table 4 HAP, per 40 CFR 63.2590 and 63.104(a)(5); therefore, they are subject to MON regulatory requirements.

The liquids product storage tanks do not store HAPs or HAPs as impurities and are not subject to MON.

The methyl chloride storage tank (MCL4) is a pressure vessel; therefore, it is not classified as a MON Rule storage tank.

The wet strength product reactor (WSR3) does not process materials with HAPs and is not defined as a MON Rule BPV.

40 CFR 63 Subpart ZZZZ – Reciprocating Internal Combustion Engines (RICE) Rule

Emergency engine GT30 will be rated at less than 500 bhp. Per 40 CFR 63.6590(c)(6), this engine will meet the requirements of Subpart ZZZZ by meeting the requirements of Subpart IIII – NSPS for Stationary Compression Internal Combustion Engines.

Emergency engines GT28 and GT29 are rated above 500 bhp. Per 40 CFR 63.6590(b)(i), these engines must meet the initial notification requirement of Subpart ZZZZ. Initial notifications were submitted to EPD in November 2022.

The modified sources are currently subject to Georgia Rules 391-3-1-.02(2)(b) and (e), which regulate visible emissions and particulate emissions from general manufacturing processes, as well as Georgia Rule 391-3-1-.02(2)(g), which regulates sulfur content in fuel used in fuel burning sources with a heat input rate less than 100 MMBtu/hr. These rules will continue to apply.

D. Permit Conditions

Conditions 3.2.1, 3.3.37, and 3.3.38 were revised to be consistent with plant terminology for the Chloromethylation Plant Lines.

Condition 3.3.43 was deleted. This condition generally referred to cooling towers that could be used, not any specific existing cooling towers.

V. Testing Requirements (with Associated Record Keeping and Reporting)

Condition 4.2.3 was revised to be consistent with plant terminology for the Chloromethylation Plant Lines.

Condition 4.2.19 was modified to remove the unit of measure for the maximum operating load (MMBtu/hr) to be consistent with Boiler MACT language.

Conditions 4.2.21 through 4.2.23 were modified to include language for the Boiler MACT performance testing requirements.

VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

None applicable.

VII. Other Record Keeping and Reporting Requirements

Conditions 6.1.7.b.i and 6.1.7.d.i were revised to be consistent with plant terminology for the Chloromethylation Plant Lines.

Condition 6.2.9 was revised to remove the reference to the cooling tower systems associated with the Flocryl Chloromethylation Plant and Chemtall Plants, as these cooling towers are considered insignificant sources.

Condition 6.2.20 was revised to be consistent with plant terminology for the Chloromethylation Plant Lines.

Conditions 6.2.42, 6.2.43, and 6.2.50 were revised to be consistent with terminology for the Boilers.

VIII. Specific Requirements

The following Off-Permit Changes were incorporated:

Application No.	Plant	Source Code	Description	Approved by EPD
TV-28461	Flocryl Acrylamide Plant Process & Chemtall Solutions Plant	V1 V2 V3 SOL	Request to install three new 53-gallon propionaldehyde/butyraldehyde (PA) storage tanks at the Flocryl Acrylamide Plant. Request to install one new reactor (WSR3) at the Solutions Plant.	August 8, 2022
TV-28517	Flocryl Acrylates Batch & Continuous Plants	N/A	Request to install cryogenic condenser recovery units directly upstream of existing thermal oxidizers TO01, CT01, & CT02, which are associated with the Flocryl Acrylates Batch (North) and Continuous (South & AD6) Plants.	September 6, 2022
TV-28732	Flocryl Acrylates Continuous (AD6) Plant	T50A T50B T040A T040B	Request to vent emissions from the MA & DMOH railcar depressurization to the MA & DMOH storage tanks, respectively.	March 2, 2023

The following changes to the Insignificant Activities Checklist were made:

- Addition of 5 diesel fuel fired fire water pumps (FT01, FT02, FT03, FT04, and FT05). FT01 and FT02 were inadvertently left out of previous applications.

- Addition of 3 diesel fuel generators (GT29, GT30, and GT31).
- Addition of 3 diesel storage tanks for the proposed emergency generators (GT29-DES, GT30-DES, GT31-DES) and 3 diesel fuel tanks (FT03-DES, FT04-DES, FT05-DES) for fire pumps FT03, FT04, and FT05.
- Add “equipment” in addition to tanks that may include non-routine clean outs.
- Addition of 7 liquids product storage tanks and 1 sulfuric acid tank (SA01).

The following changes were made to Insignificant Activities based on Emission Levels:

- Change in name from “Mannich” to “Solutions” Plant
- Addition of 1 wet strength product reactor (WSR3)
- Additions to the Chemtall Plant:
 - o 1 Liquids Plant Product Line Associated with Scrubber CE10
 - o 27 Cooling Tower Water Systems
- Additions to the Flocryl Acrylamide Plant
 - o 3 PA storage tanks
 - o 3 Cooling Tower Water Systems
- Addition to the Flocryl Acrylates Batch Plant (North)
 - o 1 Cryogenic unit directly upstream of TO01
- Addition of Cooling Tower Water Systems CT31 and CT25 to the Flocryl Acrylates (North) Continuous Plant
- Addition to the Flocryl Acrylates Continuous Plant (South and AD6)
 - o 2 Cryogenic units directly upstream of CT01 and CT02
- Additions to the Flocryl CM Plant
 - o Methyl chloride pressurized storage tank (MCL4)
 - o 1 inhibitor preparation tank (QT4_CP1-IB)

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.