

Facility Name: **SNF-Riceboro**

City: Riceboro

County: Liberty

AIRS #: 04-13-179-00011

Application #: 628420

Date SIP Application Received: August 25, 2022

Date Title V Application Received: August 25, 2022

Permit No: 2899-179-0011-V-04-2

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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 App No. 487070	9/7/2022	Title V Renewal Permit
Off-Permit App No. 28461	8/8/2022	Three new 53-gallon propionaldehyde (PA) process tanks (TPR1, TPR2, and TPR3) are proposed to be installed at the Flocryl Acrylamide Plant to reduce the amount of catalyst used in acrylamide production. In addition, installation of one new reactor (WSR3) is proposed to be installed at the Chemtall Mannich Plant. WSR3 will produce wet strength resin and polymer products.
Off-Permit App No. 28517	9/6/2022	Installation of cryogenic condenser recovery units (cryogenic units) at the Flocryl Acrylates Batch (North), Continuous (South), and Continuous (AD6) Plants. A cryogenic unit will be installed directly upstream of each existing thermal oxidizer associated with the plants (Source Codes TO01, CT01, and CT02). The cryogenic units will be used for the recovery of raw materials, which will be recycled back to the process.
2899-179-0011-V-04-1 App No. 668911	Pending	Minor modification with construction for the installation and operation of a catalyst recovery unit and associated storage tanks for the Flocryl Acrylates Batch (North) and Continuous (South and AD6) Plants. In addition, 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.

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	Y			✓
PM ₁₀	Y			✓
PM _{2.5}	Y			✓
SO ₂	Y			✓
VOC	Y	✓		
NO _x	Y	✓		
CO	Y	✓		
TRS	N			
H ₂ S	N			
Individual HAP	Y	✓		
Total HAPs	Y	✓		

II. Proposed Modification

A. Description of Modification

SNF Holding Company (SNF) proposes to modify existing permitted Liquids Line 13 (LQ13) and install new Liquids Line 14 (LQ14) for the Phase V Chemtall Plant at the SNF facility in Riceboro, Georgia.

B. Emissions Change

Table 4: Emissions Change Due to Modification

Pollutant	Is the Pollutant Emitted?	Net Actual Emissions Increase (Decrease) (tpy)	Net Potential Emissions Increase (Decrease) (tpy)
PM	N		
PM ₁₀	N		
PM _{2.5}	N		
SO ₂	Y		+0.03
VOC	Y		+1.66E-04
NO _x	N		
CO	N		
TRS	N		
H ₂ S	N		
Individual HAP	Y		+4.66E-04
Total HAPs	Y		+7.46E-04

C. PSD/NSR Applicability

Under PSD regulations, an existing major source must undergo PSD review if net emission increases from the current project and related projects within the past three years exceed the PSD significant increase thresholds. Since the project in this permit application is unrelated to previous projects completed in the last three years, only emission increases for this project were analyzed to determine if a PSD review is required, according to Application Number 628420. Total VOC and sulfur dioxide PTE increases for this project are 0.07 and 0.77 tpy, respectively. Since these increases are well below the PSD significant increase thresholds of 40 tpy for VOC and 40 tpy for sulfur dioxide, this permit modification application is not subject to PSD review. Table 2 of Application Number 628420 is presented below.

TABLE 2
COMPARISON OF EMISSION INCREASES WITH PSD THRESHOLDS

SNF Holding Company - Riceboro, Georgia

GESI Project No. 96527

Source	Proposed Emission Increases (tons/year)						
	VOC	NO _x	CO	PM	PM ₁₀	PM _{2.5} ³	SO ₂
Potential-to-Emit: Current Project							
Liquids Line LQ13 ²	0.07	-	-	-	-	-	0.74
Liquids Line LQ14	0.00	-	-	-	-	-	0.03
Total PTE:	0.07	0.00	0.00	0.00	0.00	0.00	0.77
Potential-to-Emit: Potentially Related Projects within the Past 3 Years							
None							
Total Increases³							
Total Permitted Emissions Increase:	0.07	0.0	0.0	0.0	0.0	0.0	0.8
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 - Assume PM2.5 = total PM10

2 - Liquids line LQ13 is already permitted. This line was proposed to be modified since there will be an increase in emissions from production of a new worst case product.

3 - To be conservative, baseline/historical actual emissions were not estimated.

III. Facility Wide Requirements

A. Emission and Operating Caps:

This permit modification does not add, remove, or modify any facility wide emission and/or operating caps.

B. Applicable Rules and Regulations

Rules and Regulations Assessment – This permit modification does not add, remove, or modify any facility wide applicable rules and/or regulations.

Emission and Operating Standards – This permit modification does not add, remove, or modify any facility wide emission and/or operating standards.

C. Compliance Status

Application Number 628420 does not address facility wide compliance status.

D. Permit Conditions

No permit conditions were added, removed, and/or modified in Section 2.0 of the permit as a result of the proposed modification.

IV. Regulated Equipment Requirements

A. Brief Process Description

Liquids Line 13 Modifications

Liquids Line 13 (LQ13) consists of a series of reactors as well as other associated equipment (e.g., shot tanks, pre-mix tanks, etc.). The first sets of reactors, as well as the sodium hypochlorite pre-mix tank, vent to existing two-stage scrubber CE7A/B and the last reactor vents to existing scrubber CE6.

LQ13 is currently permitted to produce a product designated as Product F, as well as products made in other Liquids Product Lines such as emulsion and solutions polymers products (i.e., Liquids products), including dry strength polymers and wet strength polymers. Per Title V Permit Condition Number 3.2.15, LQ13 is restricted from producing IPA-dispersants to avoid being subject to the PSD program.

Per Application Number 628420, SNF requests to permit LQ13 to produce a new product, designated as Product J. As shown in the emission estimates included in Attachment 3 of Application Number 628420, emissions from Product J may result in a new worst-case (higher emitting) product being produced in the base reactor. Therefore, the acrylamide permit limit for Stack SE55 (Scrubber CE7A/B) in permit condition 3.2.14 is requested to be increased from 0.103 to 0.663 pounds per 12-month period. The new permit limit is based on increases in the potential-to-emit (PTE) estimates from LQ13 as well as the PTE estimates for LQ14.

In addition, due to changes in product formulations, sulfuric acid may be used for product neutralization. As a result, sulfuric acid emissions were included.

Liquids Line 14

Per Application Number 628420, SNF proposes to install an additional liquids line, Liquids Line 14 (LQ14), which will be similar to LQ13. LQ14 will consist of a series of reactors, as well as other associated equipment (e.g., shot tanks, pre-mix tanks, etc.).

In August 2017, an off-permit change notification was submitted to Georgia EPD to permit a new reactor for LQ13 to be used for pH adjustment of finished product. SNF requests to re-permit this reactor, which vents to Scrubber CE7A/B, to be used as one of the reactors for LQ14. Additional reactors will also be installed as part of LQ14. The reactors will vent to Scrubber CE7A/B or Scrubber CE6.

LQ14 may produce Product F, Product J, and other Liquids products using the same or similar raw materials as Products F and J. Production of these other Liquids products will not emit a new pollutant that isn't already permitted for LQ14 and will not result in an increase in emissions of permitted pollutants. LQ14 will be restricted from producing IPA-dispersants to avoid being subject to the PSD program.

Storage Tanks

To account for production of Product F in LQ14, hydrochloric acid throughput in permitted storage tanks HC02 and HC03 will be increased. No physical modifications are proposed for HC02 and HC03 and these tanks will remain permitted to vent to existing Scrubber CHCL according to Application Number 628420. SNF proposes to add three finished product storage tanks.

B. Equipment List for the Process

3.1.2 Additional Emission Units

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
LQ – Liquids Product Lines				
LQ13	Liquids Products Line 13	40 CFR 63 Subpart FFFF ²	CE6	Packed-Bed Scrubber
LQ14	Liquids Products Line 14		CE7A CE7B	Two-Stage Packed-Bed Scrubber

* 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.

C. Equipment & Rule Applicability

40 CFR 60, Subpart Kb - New Source Performance Standard Standards (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. According to Application Number 628420, the capacity of the three finished product storage tanks will each be less than 19,813 gallons; therefore, the tanks will not be subject to the standard.

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

According to Application Number 628420, Liquids Lines LQ3 and LQ14 and hydrochloric acid storage tanks are MON Rule sources. The MON Rule applicability determinations and compliance methods for the liquids lines and new storage tanks are as follows:

- Liquids Lines LQ13 and LQ14: Since these lines will use materials with HAPs, a revised MON Rule Group 2 Process Vent Group Status Evaluation was completed for the vents at the facility associated with the production of Liquids products. According to Application Number 628420, the evaluation is a conservative approach which accounts for the actual anticipated products, production rates, and emission rates for the modifications in this permit application. The evaluation is provided in Attachment 4 of Application Number 628420.

The vents for Stacks SE55 (Scrubber CE7A/B) and SE56 (Scrubber CE6) are not batch process vents (BPVs) since uncontrolled HAP emissions from each vent was less than 200 pounds per year, per 40 CFR 63.2550(i)). Therefore, emissions from both vents were not included in the group determination. There were no changes to the uncontrolled HAP emission estimates for other BPVs that produce liquids products. Therefore, there will be no change to the group status for Liquids product vents, which will remain MON Rule Group 2 BPVs.

- Hydrochloric acid storage tanks - Hydrochloric acid storage tanks will remain MON Rule Group 2 storage tanks following the modifications in Application Number 628420.

A MON Rule Notification of Compliance Status (NCS) report for the Chemtall plant was submitted to the Division in October 2008 according to Application Number 628420. There are no regulatory applicability changes to the information submitted in the NCS report as a result of the proposed modifications in Application Number 628420. Therefore, notification of a change to the NCS report is not required.

Georgia Rule No. 391-3-1-.03(6)(c)7 – Storage Tanks Exemptions and Georgia Rule 391-3-1-.03(10)(g)8(vii) – Insignificant Activities

The regulation exempts all chemical storage tanks used to store a chemical with a true vapor pressure of less than or equal to 10 millimeters of mercury (0.19 psia) from obtaining a SIP construction permit. Such equipment are listed in the Insignificant Activities in Attachment B of the Title V permit. The finished product storage tanks proposed to be installed are exempt from a construction permit and will be attached to Attachment B of the Title V Permit as discussed later in this document.

Georgia Air Toxics Guidelines Assessment

According to the State's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant (TAP) Emissions (Revised March 2017)*, existing facilities that require a State Implementation Plan (SIP) permit that are either adding new equipment or modifying existing equipment that results in an increase in the emission of specified toxic air pollutants must demonstrate compliance with the Allowable Ambient Concentration (AAC) for each air toxic. If the facility-wide annual emission rate of a given toxic air pollutant (TAP) is less than the Minimum Emission Rate (MER) no further analysis is required. However, if the facility-wide emission rate exceeds the MER, the facility must show that the resulting maximum ground-level concentration (MGLC) determined by air dispersion analysis does not exceed the AAC of the TAP in question.

Acrylamide is the only toxic air pollutant above the MER listed in Georgia EPD's "Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions" that will increase as a result of this modification according to Application Number 628420. Therefore, air dispersion modeling for acrylamide was completed.

The Data Management Unit reviewed the modeling submitted by the facility and the results of its review are summarized in the tables as provided below.

Modeling Results

Table 1. TAP MGLC Assessment Without Downstacks

TAP	Averaging Period	Year*	AAC (µg/m ³)	Max Modeled Conc. (µg/m ³)	Receptor UTM Zone: 17	
					Easting (meter)	Northing (meter)
Acrylamide	Annual	1982	0.10	0.08539	459,208.70	3,511,609.00
		1983		0.09495	459,300.00	3,511,700.00
		1984		0.08901	459,208.70	3,511,609.00
		1985		0.08804	459,300.00	3,511,700.00
		1986		0.08890	459,226.30	3,511,654.00

* The latest meteorological dataset for ISCTS3 modeling is from 1982-1986

Table 2. TAP MGLC Assessment Only Downstacks

TAP	Averaging Period	Year	AAC (µg/m ³)	Max Modeled Conc. (µg/m ³)	Receptor UTM Zone: 17	
					Easting (meter)	Northing (meter)
Acrylamide	Annual	1982	0.10	0.00448	458,789.59	3,511,421.00
		1983		0.00380	459,191.00	3,511,564.75
		1984		0.00376	459,155.69	3,511,475.50
		1985		0.00383	459,226.31	3,511,654.00
		1986		0.00352	458,789.59	3,511,421.00

Table 3: TAP MGLC Assessment Combined Results⁺

TAP	Averaging Period	Modeled Source Group	Annual Max Modeled Concentrations (µg/m ³)					AAC (µg/m ³)
			1982	1983	1984	1985	1986	
Acrylamide	Annual	Without Downstacks	0.08539	0.09495	0.08901	0.08804	0.08890	0.10
		Only Downstacks	0.00448	0.00380	0.00376	0.00383	0.00352	
Total			0.08987	0.09875	0.09277	0.09187	0.09242	

⁺Coordinates are not available with combined results because locations of MGLCs vary each year by each modeled source groups. Results provide a conservative estimate of the total impact from all sources modeled together in one modeling scenario.

Therefore, the proposed modification is in compliance with the Toxics Guidelines Assessment.

D. Permit Conditions

Table 3.1.2 was added to add the applicable equipment as discussed above to the permit.

Condition 3.2.14 limits the emissions of acrylamide and acrylic acid from Liquids Product Line 13 based on a facility wide toxic impact assessment. This condition was modified as part of this permit modification to address the modification to the acrylamide emissions from LQ13 and the addition of LQ14.

Condition 3.2.15 prohibits the production of IPA-dispersants in Liquids Product Line 13. The purpose of the limit was to restrict VOC emissions from the Liquids project such that PSD was not triggered. This condition was modified as part of this permit modification to include LQ14.

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

Condition 4.2.10 requires the facility to conduct performance testing for Liquids Product Line 13. This condition was modified as part of this permit modification to address the addition of LQ14.

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

No monitoring requirements were added, removed or modified as a result of the proposed modification.

VII. Other Record Keeping and Reporting Requirements

Condition 6.1.7.b.viii specifies as an exceedance any 12-month rolling period during which acrylamide or acrylic acid emissions from Liquids Product Line 13 exceed the permit limits. This condition was modified as part of this permit modification to address the addition of LQ14.

Condition 6.1.7.b.ix specifies as an exceedance any period of operation during which IPA-dispersants are produced in Liquids Product Lines 11 through 13. This condition was modified as part of this permit modification to address the addition of LQ14.

Condition 6.2.25 requires the facility to maintain production records for the Liquids Product Lines. The data is used to demonstrate compliance with several permit limits. This condition was modified as part of this permit modification to address the addition of LQ14.

Condition 6.2.28 requires the facility to calculate acrylamide and acrylic acid emissions from Liquids Product Lines 1 through 13 on a monthly basis and a 12-month basis. The records are used to demonstrate compliance with the permit limits. This condition was modified as part of this permit modification to address the addition of LQ14.

Condition 6.2.55 requires the facility to provide a startup notification for applicable operations at the Chemtall Plant. This condition was modified as part of this permit modification to address the addition of LQ14 to require initial notification of the startup of LQ14.

VIII. Specific Requirements

A. Operational Flexibility

This modification does not specify operational flexibility for this facility.

B. Alternative Requirements

This modification does not specify alternative requirements for this facility.

C. Insignificant Activities

The insignificant activities list *Storage Tanks and Equipment Category* was updated to address the addition of the three finished product tanks discussed above in this document.

D. Temporary Sources

This modification does not specify temporary sources for this facility.

E. Short-Term Activities

This modification does not specify short-term activities for this facility.

F. Compliance Schedule/Progress Reports

Application Number 628420 does not specify compliance schedule/process reports for this facility.

G. Emissions Trading

This modification does not specify emissions trading for this facility.

H. Acid Rain Requirements/CAIR/CSPAR

This modification does not change applicability of Acid Rain Requirements/CAIR/CSPAR for this facility.

I. Prevention of Accidental Releases

This modification does not change applicability of prevention of accidental releases for this facility.

J. Stratospheric Ozone Protection Requirements

This modification does not change applicability of stratospheric ozone protection requirements for this facility.

K. Pollution Prevention

This modification does not change applicability of pollution prevention for this facility.

L. Specific Conditions

This modification does not add specific conditions for this facility.

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.//