Facility Name: **SNF-Riceboro**
City: Riceboro
County: Liberty
AIRS #: 04-13-179-00011 Application #: 220387

Date SIP Application Received: Not Applicable
Date Title V Application Received: February 7, 2018
Permit No: 2899-179-0011-V-03-8

| Program | Review Engineers | Review Managers |
|---|---|---|
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| **TOXICS** | N/A | N/A |
| **Permitting Program Manager** | | Eric Cornwell |

**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-03-0<br>App No. 22840 | 01/19/2016 | Title V Renewal Permit |
| 2899-179-0011-V-03-1<br>App No. 40425 | 2/11/2016-C<br>4/8/2016-O | MAW: SNF proposes to product a new liquids product called "Product H" in existing permitted Liquids Product Lines 1 and 2. The project will involve the installation and operation of two new mix tanks (MT01 and MT02). The mix tanks will be used to combine raw materials before they are transferred to the Liquids Product Lines 1 and 2 reactors. The emission will vent to existing scrubber CE4A/B. A baghouse (CPQL) will be installed to control particulate matter emissions from the hopper. |
| 2899-179-0011-V-03-2<br>App No. 40459 | 4/27/2016-C<br>7/6/2016-O | MAW: SNF is proposing to install two new reactors (MAN7 and MAN8) and a maleic anhydride tank (MAA1) at the Mannich Plant. The equipment will be used to produce a new Liquids product ("Product I"). Emissions from the reactors will be routed to existing permitted Scrubber SC2.<br><br>SNF is also proposing to install six new Powder Plant grinders with associated product blending, bagging, and truck loading equipment (PGTL). The Powder Plant material to be processed will come from existing Powder Plant 10 (UL) and P11 (UM). The new operations will be located in the same building as the permitted but uninstalled Powder Plant P12 (UN). Nine new baghouses (CP2K through CP2N and CP2P through CP2T) will be installed to control particulate emissions. |

Table 1: Current Title V Permit and Amendments

| Permit/Amendment Number | Date of Issuance | Description |
|---|---|---|
| Off-Permit<br>App No. 23790 | 5/5/2016 | The installation and operation of a chelating agent dilution operation and combining the stack for the existing Emulsion Plant Lines EM12 and EM14 reactors. |
| Off-Permit<br>App No. 23854 | 6/10/2016 | Revise the dryer capacity of Line P10 to 27.9 MMBtu/hr. Revise the dryer capacity of Line P11 to 30.5 MMBtu/hr. |
| Off-Permit<br>App No. 23855 | 6/14/2016 | The replacement of the burner on existing Boiler B4 with an ultra-low NOx burner. |
| Off-Permit<br>App No. 23910 | 8/4/2016 | Installation of tank MAA1 as a heated, insulated tank vented to existing scrubber SC2. |
| 2899-179-0011-V-03-3<br>App No. 41041 | 8/8/2016 | MAWO: For a change in the scrubbant flow rate excursion value for Scrubber CE9A/CE9B. |
| Off-Permit<br>App No. 24003 | 10/11/2016 | The manufacture of concentrated emulsion products for Emulsion Line EM32. |
| Off-Permit<br>App No. 24077 | 12/5/2016 | The operation of the AMPS process in existing and new equipment at Emulsion Line EM32. |
| 2899-179-0011-V-03-4<br>App No. 42303 | 1/4/2017 | MAWO: Removal of monitoring and reporting requirements associated with Scrubber CE8A/CE8B. |
| Off-Permit<br>App No. 24184 | 3/9/2017 | Requests authorization to produce a new wet strength polymer in Line No. 3 of the Chemtall Plant – Mannich Plant (referred to as WSB2). |
| 2899-179-0011-V-03-5<br>App No. 24152 | 4/4/2017 | 502(b)(10): Requests authorization to produce emulsion products on Emulsion Line 32 that contain acrylamide and/or acrylic acid. Permit incorporates monitoring for the scrubbers in series servicing this line. The scrubbers are identified as CE8A/CE8B. |
| Off-Permit<br>App No. 26192 | 10/17/2017 | Install an additional reactor in the Chemtall Plant – Liquids Product Line 13. The additional reactor will vent through existing scrubbers CE7A/B. |
| Off-Permit<br>App No. 26323 | 12/21/2017 | Addition of Acrylamide Plant buffer tanks. |

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 (NOx), and carbon monoxide (CO).

SNF operates with the following PSD Avoidance limits:

**Table 2: PSD Avoidance Limits**

| Plant | Condition No. | Pollutant | Limit | Note(s) |
|---|---|---|---|---|
| CHEMTALL | 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. | Permit condition 6.1.7.b.i defines an exceedance of existing permit condition 3.2.1.<br><br>Permit condition 6.2.20 requires SNF to maintain the appropriate records to calculate monthly and consecutive twelve-month rolling total VOC emissions. |
| | 3.2.11 | VOC | The Permittee shall not product 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. | Permit condition 6.1.7.b.v defines an exceedance for purposes of permit condition 3.2.11.<br><br>Permit conditions 6.2.25 and 6.2.26 requires SNF to maintain the appropriate records to verify compliance with permit condition 3.2.11. |
| | 3.2.12 | $SO_2$ | 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. | Permit condition 6.1.7.b.vi defines an exceedance of existing permit condition 3.3.12.<br><br>Permit condition 6.2.27 requires SNF to maintain the appropriate records to verify compliance with permit condition 3.3.12. |

| Table 2: PSD Avoidance Limits | | | | |
|---|---|---|---|---|
| **Plant** | **Condition No.** | **Pollutant** | **Limit** | **Note(s)** |
| | 3.2.14 | VOC | The Permittee shall not produce IPA-dispersants in Liquids Product Line 11 or 12 (Source Codes LQ11 and LQ12). | Existing permit condition 6.1.7.b.x defines an exceedance of existing permit condition 3.2.14. |
| | 3.2.16 | VOC | The Permittee shall not produce IPA-dispersants in Liquids Product Line 13 (Source Code LQ13) | Permit condition 6.1.7.b.x defines an exceedance of existing permit condition 3.2.16. |

2. Title V Major Source Status by Pollutant

The numerical values specified in Table 3 are taken from the narrative associated with Title V application number 44087. Table 3 includes the maximum potential to emit ("PTE") of an individual HAP.

**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 | ✓ | | | ✓ (~68 tpy) |
| $PM_{10}$ | ✓ | | | ✓ (~81 tpy) |
| $PM_{2.5}$ | ✓ | | | ✓ (~81 tpy) |
| $SO_2$ | ✓ | | | ✓ (~47 tpy) |
| VOC | ✓ | ✓ (~154 tpy) | | |
| $NO_x$ | ✓ | ✓ (~276 tpy) | | |
| CO | ✓ | ✓ (~234 tpy) | | |
| TRS | -- | -- | -- | -- |
| $H_2S$ | -- | -- | -- | -- |
| Individual HAP | ✓ | ✓ (~52 tpy) | | |
| Total HAPs | ✓ | ✓ (~115 tpy) | | |

## II. Proposed Modification

A. Description of Modification

The Chemtall Plant includes Liquids Product (LQ) Lines 1 through 13. This permitting action pertains to LQ Lines 1 through 10. LQ Lines 1through 10 exhaust to the atmosphere through a two-stage packed bed scrubber with ID No. CE4A and CE4B. SNF has installed Lines 1, 2, 3, 4, 6, 7, and 8. Line 5 was taken out of service in November 2015.

SNF added Lines 7 and 8 in 2017 which triggered the testing requirement of existing permit condition numbers 4.2.8 and 4.2.9 for emissions of acrylic acid, acrylamide, and sulfur dioxide. SNF conducted acrylic acid, acrylamide, and sulfur dioxide emissions testing from the combined exhaust of scrubbers CE4A/CE4B with LQ Lines 1, 2, 3, 4, 6, 7, and 8 in operation. An emission factor was developed based on the results from the performance test. Since the acrylamide results were below the analytical detection limit, the emission factor was conservatively based on the detection limit.

As required by permit condition number 6.2.28, using the emission factor developed from the performance test, consecutive twelve month total emissions for LQ Lines 1 through 10 are being calculated on a monthly basis. Currently, the consecutive twelve month total acrylamide emissions are less than the current permit limit. However, if SNF continues at current production rates, they may exceed the acrylamide permit limit when using the acrylamide emission factor developed from the Division approved test results of June 2017. Although SNF believe the acrylamide emission factor, based on the June 2017 testing, overestimates acrylamide emissions, SNF requests that the allowable acrylamide emissions from LQ Lines 1 through 10 be increased.

The original controlled annual average acrylamide emission rate from LQ Lines 1 through 10 was approximately 1.29E-04 pounds per hour. This annual average emission rate in pounds per hour equates to 1.13 pounds of acrylamide emissions per year assuming 8,760 hours per year of operation. Existing permit condition number 3.2.10 establishes the acrylamide emission limit of 1.13 pounds during any consecutive twelve months.

To allow for flexibility in the future, the request emission rate was calculated using the methodology required under the MON Rule for production of the project with the worst case acrylamide emissions that can be produced in LQ Lines 1 through 10. The revised controlled annual average acrylamide emission rate from LQ Lines 1 through 10, on a combined basis was calculated to be approximately 7.19E-03 pounds per hour. This annual average emission rate in pounds per hour equates to 63 pounds per year assuming 8,760 hours per year.

Application No. 220387 is a request to revise the acrylamide emission limit in existing permit condition number, from 1.13 pounds per consecutive 12-month period to 63 pounds per consecutive 12-month period.

B. Emissions Change

**Table 4: Emissions Change Due to Modification**

| Pollutant | Is the Pollutant Emitted? | Net Actual Emissions Increase (Decrease) (pounds per year) | Net Potential Emissions Increase (Decrease) (pounds per year) |
|---|---|---|---|
| PM | -- | -- | -- |
| $PM_{10}$ | -- | -- | -- |
| $PM_{2.5}$ | -- | -- | -- |
| $SO_2$ | -- | -- | -- |
| VOC | ✓ | 61.87 | 61.87 |
| $NO_x$ | -- | -- | -- |
| CO | -- | -- | -- |
| TRS | -- | -- | -- |
| $H_2S$ | -- | -- | -- |
| Individual HAP | ✓ | 61.87 | 61.87 |
| Total HAPs | ✓ | 61.87 | 61.87 |

C. PSD/NSR Applicability

The revised PTE of acrylamide emissions (or in this case VOC emissions) from the Liquids Products Lines does not trigger PSD/NSR.

## IV. Regulated Equipment Requirements

A. Brief Process Description

SNF is permitted to install and operate thirteen LQ 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.

B. Equipment List for the Process

No new equipment is added based on this application. This air permit application pertains to Liquids Product Lines 1-10.

| Emission Units | | Specific Limitations/Requirements | | Air Pollution Control Devices | |
|---|---|---|---|---|---|
| **ID No.** | **Description** | **Applicable Requirements/Standards** | **Corresponding Permit Conditions** | **ID No.** | **Description** |
| **CHEMTALL PLANT** | | | | | |
| **LQ –Liquids Product Lines** | | | | | |
| LQ01 through LQ02 | Liquids Product Lines 1-2 | 40 CFR 63 Subpart FFFF[2]<br>391-3-1-.02(2)(b)<br>391-3-1-.02(2)(e) | 3.2.10 through 3.2.12, 3.3.34, 3.4.1, 3.4.2, 4.2.8, 4.2.9, 4.2.12, 5.2.2, 5.2.4, 5.2.5, 6.1.7, 6.2.10 through 6.2.12, 6.2.25 through 6.2.28, and 6.2.60* | CE4A/ CE4B<br><br>CPLQ | Two-Stage Packed-Bed Scrubber<br><br>Baghouse |
| LQ03 through LQ10 | Liquids Product Lines 3-10 | 40 CFR 63 Subpart FFFF[2]<br>391-3-1-.02(2)(b)<br>391-3-1-.02(2)(e) | 3.2.10 through 3.2.12, 3.3.34, 3.4.1, 3.4.2, 4.2.8, 4.2.9, 4.2.12, 5.2.2, 6.1.7, 6.2.10 through 6.2.12, 6.2.25 through 6.2.28, and 6.2.56* | CE4A CE4B | 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 and corresponding permit conditions are intended as a compliance tool and may not be definitive.
[1]Group 1 source. [2]Group 2 source. [3]Group 1 source for MMA/Group 2 source for MA, but controlled at all times. [4]Not subject to regulation, but controlled at all times.
**Offline backup to the Cryogenic Condenser Recovery Unit.

C. Equipment & Rule Applicability

40 CFR 63 Subpart FFFF – MON NESHAP: The Liquids Product Lines are classified as Group 2 vents; therefore, they are not required to be controlled. No change to the existing MON regulation requirements are necessary based on this permit application.

Georgia Rule 391-3-1-.02(2)(b) – Visible Emissions: Georgia Rule (b) limits the opacity of emissions from any source to less than 40 percent. No change to the existing opacity requirements are necessary based on this permit application.

Georgia Rule 391-3-1-.02(2)(e) – Particulate Emission from Manufacturing Processes: Georgia Rule (e) limits PM emissions from manufacturing processes based on the input weight rate to the process equipment. The equation for calculating the limit is included in SNF's existing Title V Permit. No change to the existing Georgia Rule (e) requirement is necessary based on this permit application.

Georgia Air Toxics Guideline: SNF operates under several acrylamide emission limits for purposes of compliance with this guideline. Acrylamide emissions can originate from the Powder Plant, Emulsion Plant, Liquids Plant, Mannich/NMA Plant, and Acrylamide Plant. SNF requests an increase in the annual acrylamide emission rate from 1.13 pound per year to 63 pounds per year from Liquids Product Lines 1 through 10, on a combined basis. This increase in acrylamide emissions, along with existing facility emission points of the same pollutant, has been shown to comply with this guideline. The Division concurs with the applicant's findings.

D. Permit Conditions

| | |
|---|---|
| **Permit Condition No.** | **Discussion** |
| 3.2.10.a | Revise the acrylamide emission limit from liquid product lines #1 through #10. |

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

No additional testing requirements are necessary based on Application No. 220387.

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

SNF is required to operate a pressure drop monitor (stages A and B combined), scrubbant flow rate (stages A and B combined), and scrubbant pH (for each stage). Monitoring data shall be recorded once per shift of operation. No additional monitoring requirements are necessary based on Application No. 220387.

## VII. Other Record Keeping and Reporting Requirements

- Existing permit condition number 6.1.7.b.vii defines an exceedance of existing permit condition number 3.2.10. No revision to permit condition number 6.1.7.b.vii is necessary based on Application No. 220387.
- Existing permit condition number 6.1.7.c.xvi defines an excursion for the applicable scrubbers. No revision to permit condition number 6.1.7.c.xvi is necessary based on Application No. 220387.
- Existing permit condition numbers 6.2.25 and 6.2.28 define the method for estimating acrylamide emissions from the Liquids Product Lines. No revision to permit condition numbers 6.2.25 and 6.2.28 is necessary based on Application No. 220387.

## VIII. Specific Requirements

A. Operational Flexibility

None applicable.

B. Alternative Requirements

None applicable.

C. Insignificant Activities

None applicable.

D. Temporary Sources

None applicable.

E. Short-Term Activities

None applicable.

F. Compliance Schedule/Progress Reports

None applicable.

G. Emissions Trading

None applicable.

H. Acid Rain Requirements/CAIR/CSPAR

Not applicable

I. Prevention of Accidental Releases

No revisions to SNF's existing Title V permit requirements (in this case, 40 CFR 68) are necessary based on Application No. 220387.

J. Stratospheric Ozone Protection Requirements

No revisions to SNF's existing Title V Permit requirements based on Title VI of the 1990 Clean Air Act Amendment are necessary based on Application No. 220387.

K. Pollution Prevention

None applicable.

L. Specific Conditions

No additions to Section 7.14 of SNF's Title V Permit are necessary based on Application No. 220387.

**Addendum to Narrative**