

TITLE V MINOR MODIFICATION (without construction) APPLICATION REVIEW

Facility Name: **The NutraSweet Company**

City: Augusta

County: Richmond

AIRS #: 04-13-245-00136

Application #: 15641

Date SIP Application Received: September 23, 2004

Date Title V Application Received: January 11, 2005

Permit No: 2869-245-0136-V-01-2

Program	Review Engineers	Review Managers
SSPP	Wendy Troemel	David Matos
SSCP	Sandra Alvarado	Douglas Waldron
ISMP	Michael Dookie	Richard Taylor/James Capp
TOXICS	N/A	N/A

Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft/proposed 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 proposed 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 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 and minor and significant modifications and 502(b)(10) changes. Comments are listed in Table 2 below.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Comments	
		Yes	No
2869-245-0136-V-01-0	October 29, 2003		X
2869-245-0136-V-01-1	March 11, 2004	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
2869-245-0136-V-01-1	Minor modification with construction for the installation and operation of replacement scrubbers VF-572 APM I Atmospheric Vent Scrubber (Source Code: A572) and No. 1 Waste Heat Recovery Boiler Scrubber (Source Code: UWC1) and to correct typographical errors in Permit Condition 6.1.7.c.

B. Regulatory Status

1. PSD/NSR/RACT - The NutraSweet Company is a major source under Prevention of Significant Deterioration (PSD) regulations. The facility underwent a PSD review upon initial construction in 1984 and reviewed emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x), and volatile organic compounds (VOC). The 1984 PSD review permitted the 243 million BTU per hour boiler, the L-Phenylalanine plant, the Aspartame I plant, and a waste treatment facility.

The following limits are the result of the PSD review:

- The Main Boiler (Source Code: U501) is limited to the following:
 - firing fuel oil that contains less than 0.5 sulfur, by weight
 - firing fuel oil to 1,488 hours per consecutive twelve-month period (BACT)
 - 0.2 pounds NO_x per million BTU heat input while firing natural gas
 - 0.3 pounds NO_x per million BTU heat input while firing fuel oil
- The Wastewater Treatment Facility and Hydrogen Sulfide Flare (Source Code: W102) are limited to 10 tons per year of hydrogen sulfide (H₂S) emissions and 43 tons per year SO₂ emissions (BACT).

The following limits have been taken by the facility to avoid a PSD review. The facility “netted out” and took limits to avoid a modification being subject to PSD/NSR review.

- The facility is limited to 102.5 tons per year of NO_x emissions from the entire facility (established in 1990 Plant Expansion).

- The No. 2 Waste Heat Recovery Boiler (Source Code: UWU2) is limited to the following (established in 1988 Plant Expansion):
 - 0.875 pounds per hour of particulate matter (PM) emissions
 - 7.15 pounds per hour of NO_x emissions
 - 3.1 pounds per hour of carbon monoxide (CO) emissions
 - 3.65 pounds per hour of hydrogen chloride (HCl) emissions
 - 2.85 pounds per hour of SO₂ emissions
 - 0.48 pounds per hour of VOC emissions
- The No. 1 Waste Heat Recovery Boiler (Source Code: UWU1) is limited to less than 40 tons of NO_x emissions per consecutive twelve-month period (established in 1997 Boiler Issues).
- The Main Boiler (Source Code: U501) is limited to firing 1,240,000 gallons of No. 2 fuel oil per consecutive twelve-month period (established in 2002 Economizer Replacement).
- The VG-611 Soak Tank (Source Code: A611) is not allowed to emit CO unless during maintenance, an orderly shutdown, to install a new system modification pursuant to a permit modification approved by the Division, or in the event the Main Boiler is unable to burn the emissions (established in 1990 Plant Expansion and modified in 1993). This condition originally allowed the CO emissions to be incinerated in any boiler, but was modified in the Title V Permit to include only the Main Boiler.

The Initial PSD permit also contained a PSD/BACT limit of 75 tons per year for VOC emissions from an esterification reactor in the Aspartame plant. However, in the 1987 Plant Expansion, the reactor was removed to provide an emission credit of 19.4 tons VOC per year.

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	Yes	✓		
PM ₁₀	Yes	✓		
SO ₂	Yes	✓		
VOC	Yes	✓		
NO _x	Yes	✓		
CO	Yes	✓		
TRS	Yes			✓
H ₂ S	Yes			✓
Individual HAP	Yes	✓		

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
Total HAPs	Yes	✓		

II. Proposed Modification

A. Description of Modification - Application No. 15641 was submitted by the facility on September 14, 2004 to modify the condenser valve monitoring and to modify the carbon monoxide (CO) monitoring and reporting protocol for the No. 2 Waste Heat Recovery Boiler (Source Code: UWU2). The application was deemed complete on January 11, 2005 with the submittal of the Title V Electronic Application. This application is being processed as a minor modification without construction to Title V Permit No. 2869-245-0136-V-01-0 since the modification does not involve significant changes to monitoring, reporting, or record keeping.

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	Yes	0	0
PM ₁₀	Yes	0	0
SO ₂	Yes	0	0
VOC	Yes	0	0
NO _x	Yes	0	0
CO	Yes	0	0
TRS	Yes	0	0
H ₂ S	Yes	0	0
Individual HAP	Yes	0	0
Total HAPs	Yes	0	0

C. PSD/NSR Applicability - Since there are no increases in emissions, there are no PSD or NSR issues with this modification.

III. Facility Wide Requirements

A. Emission and Operating Caps - Not Applicable

B. Applicable Rules and Regulations - Not Applicable

C. Compliance Status - The facility did not indicate that they are out of compliance with any applicable facility-wide rules and regulations in the application for this modification.

D. Operational Flexibility - Not Applicable

E. Permit Conditions - There are no new or modified permit conditions in Section 2.0 due to this modification.

IV. Regulated Equipment Requirements

- A. Brief Process Description – For the No. 2 Waste Heat Recovery Boiler, the facility has a PSD Avoidance limit of 3.1 pounds per hour for CO. The facility also has a RCRA limit for this boiler of 100 ppm for CO, which is more stringent than the PSD Avoidance limit. The boiler’s CO shutdown alarms are set at 90 ppm, at which time the waste feed goes into automatic shutoff. Since the facility will never be able to exceed the PSD Avoidance limit (which is equivalent to 124 ppm), it is the Division’s opinion that the facility’s monitoring protocol for RCRA is acceptable and does not want to require the facility to do any additional record keeping for the purposes of the PSD Avoidance limit. Permit Condition 3.3.10.c will be modified to include the equivalent ppm limit of 124 ppm. The facility will still be required to continuously monitor CO emissions per Permit Condition 5.2.6.a and report any excess emissions per Permit Condition 6.1.7.a.i. However, since the Permit will now contain the ppm limit, the facility will not be required to convert the ppm limit to pounds per hour per the requirements of Permit Condition 6.2.13.
- B. Equipment List for the Process - There is no new equipment being installed due to this modification. No changes will be made to Table 3.1 of the Permit.
- C. Equipment & Rule Applicability - Not Applicable
- D. Compliance Status - The facility did not indicate that they are out of compliance with any applicable rules and regulations in the application for this modification.
- E. Operational Flexibility - Not Applicable
- F. Permit Conditions

Permit Condition 3.3.10.c was modified to include the ppm equivalent for 3.1 pounds per hour. Based on the facility information of 5,780 dscfm air flow and a molecular weight of 28 for CO:

$$\text{lb/hr} = \text{scf/hr} \times \text{ppm}/1,000,000 \times \text{MW}/385$$

$$\frac{3.1 \text{ lb CO}}{\text{hr}} = \frac{346,800 \text{ scf}}{\text{hr}} \times \frac{\text{ppm}}{1,000,000} \times \frac{28}{385}$$

$$\text{ppm} = 124$$

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

Not Applicable

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

The monitoring for the VS-605, VS-175, HX-631, VS-632, VS-633, HX-132, T505A, T505B, T505C, T508, T509, T510, HX-703, HX-718, HX-2704, and HX-2732 Vent Condensers (Source Codes: HX06, HX04, HX05, HX632, HX07, HX132, TX5A, TX5B, TX5C, TX58, TX59, TX51, HX01, HX03, HX27, and HX273) will be modified. The facility has asserted that the coolant valves remain open at all times unless maintenance is being performed on the condenser or main header. SSCP has agreed that the shift monitoring of “open/closed” for these valves is not needed. The facility will still be required by Permit Condition 6.1.7.c.iii to report any times the valve is closed, but will not be required to monitor the position of open/closed per shift. Permit Condition 5.2.2.b was modified to remove this requirement.

Permit Condition 5.3.1 was modified to remove “5.2.7” from the condition. This is a typographical error that has been previously overlooked. Permit Condition 5.2.7 does not exist.

VII. Other Record Keeping and Reporting Requirements

Permit Condition 6.1.7.a.i was modified to replace “5.2.7.a” with “5.2.6.a.” There is no Permit Condition 5.2.7, and this condition clearly refers back to Permit Condition 5.2.6. Also, the phrase “and converted to pounds per hour per Condition 6.2.13” was removed from the permit since the pounds per hour limit was converted to ppm in Permit Condition 3.3.10.c.

Permit Condition 6.2.13 was removed from the permit. Since the ppm limit was included in Permit Condition 3.3.10.c, no conversion protocol is needed to assure compliance with this PSD Avoidance limit.

VIII. Specific Requirements

- A. Operational Flexibility – Not Applicable
- B. Alternative Requirements – Not Applicable
- C. Insignificant Activities – Not Applicable
- D. Temporary Sources – Not Applicable
- E. Short-Term Activities – Not Applicable
- F. Compliance Schedule/Progress Reports – Not Applicable
- G. Emissions Trading – Not Applicable
- H. Acid Rain Requirements – Not Applicable
- I. Prevention of Accidental Releases – Not Applicable
- J. Stratospheric Ozone Protection Requirements – Not Applicable

- K. Pollution Prevention – Not Applicable
- L. Specific Conditions – Not Applicable

Addendum to Narrative

The 45-day EPA review started on February 21, 2005 and ended on April 7, 2005. Comments were not received by the Division.