

## TITLE V APPLICATION REVIEW

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Facility Name: Keebler Company - Sunshine Biscuits, Inc.

City: Columbus

County: Muscogee

AIRS #: 04-13-215-00050

Application #: TV- 9167

Date Application Received: October 22, 1996

Date Application Deemed

Administratively Complete: January 16, 1997

Date of Draft Permit: September 11, 1998

Permit No: 2052-215-0050-V-02-0

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### Introduction

This narrative is being provided to assist the reader in understanding the content of the attached Title V operating permit. 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 proposed pursuant to: (1) Section 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 primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to Keebler Company - Sunshine Biscuits, Inc. and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. 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 participation process will be described in an addendum to this narrative.

**I. Facility Description**

A. Facility Identification

1. Facility Name: Sunshine Biscuits, Inc.
2. Parent/Holding Company Name: Keebler Company
3. Previous and/or Other Name(s): Keebler/Sunshine Biscuits, Inc.
4. Facility Location: 3700 Victory Drive  
Columbus, Georgia 31903  
Muscogee County
5. Attainment or Non-attainment Area Location: Muscogee County - Attainment Area
6. Class I Area Impacts: There is no Class I area within 100 km of this source.

B. Site Determination: There are no site determination issues. There are no other facilities which could possibly be contiguous or under common control.

C. Existing Permits

**Table 1: List of Current Permits, as Amended**

Permit Number and/or Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
		Yes	No
2052-215-0050-E-01-0	May 21, 1998		x

D. Process Description

1. SIC Code: 2052 - Cookies and crackers
2. Description of Product(s):  
Keebler Company produces crackers and cookies (Krispy, Cheez-It, etc.).
3. Overall Facility Process Description:
  - a. **Cracker and Cookie production** - Flour and sugar is blown into the mixing tanks where it is sifted and mixed with other ingredients such as yeast (for ovens #1, #3, and #4), salt, molasses, syrup, and water to make a dough-type mixture. The mixture is then mixed with more flour and sugar. The resulting dough is then kneaded, cut into the proper size and sent to one of three ovens (Source Codes OV01 - OV03). The dough is baked for about 5 to 10 minutes at a temperature of 450 to 500°F. The cookies and crackers exiting the oven are allowed to cool on the conveyor to the packaging area.

Ovens OV01, OV02, and OV03 utilize yeast in their cookie and cracker formulations. The emissions associated with these ovens are primarily VOC (ethanol). Ethanol emissions account for well over 99 % of the total VOC emissions from the ovens. The oven (OV01) has a maximum

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input rate of 6520 pounds per hour and produces fermented (uses yeast) crackers. The ovens (OV02) and (OV03) have maximum input rates of 5000 pounds per hour and 7000 pounds per hour, respectively, and both produce fermented crackers. No HAP emissions are associated with this facility. The emissions associated with this facility have been calculated as part of Application No. 10571. These emission calculations demonstrate how the Title V emission limits are determined. The Attachments to this permit narrative are the original permit narrative for Application No. 10571 along with emission calculations and the toxic impact assessment for Application No. 10571. These calculations are still valid for the facility.

- b. **Support Facilities** - Ten raw material silos (Source Codes SL1 thru SL10) provide the white flour, sugar, and other ingredients for the process. The two small boilers (Source Codes B1 and B2) provide steam for the process line. The PM emissions from the raw material silos are minimal while there are minimal NO<sub>x</sub> emissions from the two Boilers (B1 and B2). Boilers B1 and B2 have a maximum input rating of 0.1 MMBTU/hr each and burn natural gas as fuel. These boilers were omitted in the calculations dated April 28, 1998 but the emissions from these units are very small compared to the natural gas burners on the ovens and should not alter the emissions profile significantly.

4. Overall Process Flow Diagram: none given

5. Overall Process Emissions:

**Table 2: Keebler Company - Sunshine Biscuit, Inc. Emissions**

Pollutant	Potential Emissions (tpy)	Potential Emissions (tpy) - with Permit Limits	Actual Emissions (tpy) anticipated average
VOC	564.8	249.0	201.16
NO <sub>x</sub>	42.37	42.37	21.4
CO	7.13	7.13	3.6
PM-10	94.2	94.2	1.3
Sulfur Dioxide	0.49	0.49	0.11

6. Toxic Impact Assessment:

The facility's only major toxic pollutant is ethanol (VOC). The facility passes the toxic impact assessment for ethanol (see calculations, attached). This toxic impact assessment was performed as part of the permit review for Application No. 10571.

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7. Source Code Listing for the Bakery Ovens

Bakery Oven Number	Previous Source Code	New Source Code
Oven #1	OV01	OV01
Oven #2	OV02	Decommissioned 6/98
Oven #3	OV03	OV02
Oven #4	OV04	OV03

E. Regulatory Status

- PSD/NSR: Non-major source under PSD/NSR regulations.  
The facility was potentially a major source (564.8 tpy VOC) under PSD/NSR regulations, but has taken a limit on VOC emissions of 249 tpy to remain a minor PSD source and avoid PSD review.

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?		
		Major Source Status	Major Source requesting SM Status	Non-Major Source Status
PM	✓			✓
PM <sub>10</sub>	✓			✓
SO <sub>2</sub>	✓			✓
VOC	✓	✓		
NO <sub>x</sub>	✓			✓
CO	✓			✓
TRS	✓			✓
H <sub>2</sub> S	✓			✓
Individual HAP	n/a			
Total HAPs	n/a			

- MACT Standards: This facility is not a major source for any hazardous air pollutants (HAP) and is not subject to any MACT Standards.

4. Program Applicability

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Indicate if the following programs are applicable to the facility (with a “yes” or “no”).

Program Code 6 - PSD:	no
Program Code 8 - Part 61 NESHAP:	no
Program Code 9 - NSPS:	no
Program Code M - Part 63 NESHAP:	no
Program Code V - Title V:	yes

### Regulatory Analysis

#### II. Facility Wide Requirements

##### A. Emission and Operating Caps:

1. The facility is limited to 249 tons per year of VOC emissions from the source. This limit was established to keep the facility's VOC emissions below the 250 tpy threshold for PSD. The facility is in compliance with this emission limit.

##### B. Applicable Rules and Regulations:

- Rules and Regulations Assessment - The facility is subject to the following Georgia State Rules:

391-3-1-.02(2)(b)	Visible Emissions
391-3-1-.02(2)(d)	Fuel Burning Equipment
391-3-1-.02(2)(e)	Particulate Emissions from Manufacturing Processes
391-3-1-.02(3)	Sampling

- Emission and Operating Standards:

391-3-1-.02(2)(b)	Visible Emissions: Limits opacity of air contaminant source to less than 40 %.
391-3-1-.02(2)(d)	Fuel Burning Equipment: Limits particulate matter from any fuel burning source less than 10 million BTU per hour to 0.5 pounds per million BTU heat input. Actual PM emissions are less than 0.1 pounds per million BTU heat input.
391-3-1-.02(2)(e)	Particulate Emissions from Manufacturing Processes: Limits emission of particulate matter from process equipment to 21.51 pounds per hour based on the formula $E = 4.1(P)^{0.67}$ , E = emission rate in pounds per hour, P = process input weight rate in tons per hour = 11.87 tons/hr. Actual PM emissions are less than 0.60 pounds per hour.

##### C. Compliance Status:

The facility has not indicated any noncompliance issues in Section 11.10 of their Title V application.

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D. Operational Flexibility: The facility has not requested any operational flexibility in their Title V application. There are no new rules, regulations or work practices that will be applicable to this source for the purposes of operational flexibility.

E. Permit Conditions:

Conditions for the Title V permit Part 2.0 include the following:

1. Condition 2.1.1 limits the facility's VOC emissions to no more than 249 tpy during any twelve consecutive months.

### III. Regulated Equipment Requirements

A. Brief Process Description:

- (1) The cookie and cracker production lines consist of one oven each (Source Codes OV01, OV02, and OV03) and one set of natural gas burners for each oven. The burner ratings for the ovens are 13.2 MMBTU/hr for OV01, 8.3 MMBTU/hr for OV02, and 13.0 MMBTU/hr for OV03. The ovens will comply with all Georgia Rules. For process description see Cookie/Cracker Production in Section I D. - Overall Process Description. The ovens (OV01-OV03) will emit ethanol (VOC).
- (2) Two boilers (Source Codes B1 & B2) are used to provide steam to the process lines. Both will be operating at all times during operation of the process lines. The two boilers (Source Codes B1 & B2) are subject to Georgia State Rule 391-3-1-.02(d) Fuel Burning Equipment. The boilers B1 & B2 are fired with natural gas with LPG as a backup fuel and comply with the above Georgia State Rule.

B. Equipment List for the Process:

**Table 4: Equipment List and Source Code**

Emission Unit ID No.	Emission Unit Description	Applicable Permit Condition No.(s)	Applicable Requirement(s)	Air Pollution Control Device No.
OV01 - OV03	Cookie and Cracker ovens	3.4.1, 3.4.2	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	none
SL1 - SL10	Raw material silos	3.4.1, 3.4.2	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	FF1 - FF10

C. Equipment & Rule Applicability:

- Emission and Operating Caps:

1. The facility is limited to 249 tons per year of VOC emissions from the source. This limit was established to keep the facility's VOC emissions below the 250 tpy threshold for PSD. The facility is in compliance with this emission limit.

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- Applicable Rules and Regulations:

Rules and Regulations Assessment - The facility is subject to the following Georgia State Rules:

- 391-3-1-.02(2)(b) Visible Emissions
- 391-3-1-.02(2)(d) Fuel Burning Equipment
- 391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes
- 391-3-1-.02(3) Sampling

- Emission and Operating Standards:

- 391-3-1-.02(2)(b) Visible Emissions: Limits opacity of air contaminant source to less than 40 %.
- 391-3-1-.02(2)(d) Fuel Burning Equipment: Limits particulate matter from any fuel burning source less than 10 million BTU per hour to 0.5 pounds per million BTU heat input. Actual PM emissions are less than 0.1 pounds per million BTU heat input.
- 391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes: Limits emission of particulate matter from process equipment to 21.51 pounds per hour based on the formula  $E = 4.1(P)^{0.67}$ , E = emission rate in pounds per hour, P = process input weight rate in tons per hour = 11.87 tons/hr. Actual PM emissions are less than 0.60 pounds per hour.

D. Compliance Status:

The facility has not indicated any noncompliance issues in Section 11.10 of their Title V application.

E. Testing, Monitoring and Recordkeeping:

See Sections IV, V, and VI.

F. Operational Flexibility: The facility has not requested any operational flexibility in their Title V application.

G. Permit Conditions: The following conditions have been included in the Title V permit and are equipment or process specific.

1. Condition 3.41 subjects the three process lines OV01 through OV03 and the ten silos SL1 through SL10 to Rule (b). This limits opacity from process lines OV01 through OV03 and the ten silos SL1 through SL10 to no greater than forty percent. [391-3-1-.02(b)]
2. Condition 3.4.2 subjects the three process lines OV01 through OV03 and the ten silos SL1 through SL10 to Rule (e). This limits the particulate matter emissions derived from  $E = 4.1*(P)^{0.67}$ . At a maximum input rate of 11.87 tons per hour dough, the emission rate can be no more than 21.51 pounds per hour. The facility has PM emissions of less than 0.6 pounds per hour. [391-3-1-.02(e)]

**IV. Testing Requirements (with Associated Recordkeeping and Reporting)**

A. General Testing Requirements:

The permit specifies that a performance test may be required to determine compliance with the emission limits in Part 3.0. General conditions requiring notification and submission of a test plan for any source test and specifying test methods to be used are included.

B. Specific Testing Requirements

None of the applicable regulations requires performance testing, therefore this permit does not contain any conditions to require specific testing for any sources.

**V. Monitoring Requirements (with Associated Recordkeeping and Reporting)**

A. General Monitoring Requirements:

Not Applicable

B. Specific Monitoring Requirements

The facility uses fabric filters (Source Codes FF1 - FF10) to control the flour storage silos (Source Codes SL1-SL10). A condition to observe emissions points from the silos once per fill cycle and to determine any periods during which visible emissions occur is included. Additionally, a condition is included which requires that the fabric filters on the silos be removed, inspected, and cleaned. A condition requiring the reporting of deviations from these operational practices for the fabric filters is also included

Two 0.1 MMBTU/hr natural gas-fired boilers (Source Codes B1 and B2) provide steam for the process lines. These sources are subject to Georgia Rules (b) and (d). Particulate Matter emissions from the combustion of natural gas is insignificant, and the violation these Rules is not likely to occur; therefore, no additional monitoring is specified.

The remaining fuel burning sources at the facility compose Equipment Group No. GR01 and are subject to Georgia Rules (b) and (e). They are three cookie and cracker baking ovens (source codes OV01 through OV03) with heat capacities of 13.2, 8.3, and 13.0 MMBTU/hr, respectively. These sources burn only natural gas with LPG as a backup fuel. The Rule (e) emissions limit for these sources is 21.51 lbs/hr, and the facility has uncontrolled actual PM emissions of less than 0.6 lbs/hr based on AP-42 emission factors. Therefore, violation of Rule (e) is not likely to occur, and no additional monitoring is specified.

C. Recordkeeping and Reporting Requirements :

Records, including identification of any deviations from applicable monitoring triggers, the cause of such occurrence, and the corrective action taken are required to be kept by the Permittee and reporting is required on a semiannual basis.

**VI. Other Recordkeeping and Reporting Requirements**

A. General Recordkeeping and Reporting Requirements:

General requirements for the maintenance of all records for a period of 5 years following the date of entry and prompt reporting of excess emissions from process malfunctions or improper maintenance are included in the permit.

B. Specific Recordkeeping and Reporting Requirements:

The existing permit includes a 249 tpy VOC limit to ensure that the facility is not subject to PSD. The permit contains a condition requiring that usage records be kept of materials containing VOCs. A condition is included which provides an equation for calculating an emission factor for VOC emissions from the baking ovens. And finally, a condition is included requiring record keeping of total monthly VOC emissions and notification of the Division if VOC emissions exceed 20.75 tons during any calendar month.

The following emission factor must be used for calculating VOC emissions:

$$\text{VOC Emission Factor} = (0.95*Y_i) + (0.195*t_i) - (0.51*S) - (0.86*t_s) + 1.90$$

$Y_i$  = Initial Baker's percent of yeast

$t_i$  = Total yeast action time

$S$  = Final baker's percent of yeast

$t_s$  = Spiking time in hours

This emission factor is from U.S. EPA document number 453/R-92-017 - *Alternative Control Technology Document for Bakery Oven Emissions* December 1992.

**VII. Specific Requirements**

A. Operational Flexibility

The facility has not indicated a need for operational flexibility.

B. Alternative Requirements

There are no alternative requirements indicated.

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C. Insignificant Activities

The following is a list of the facility's insignificant activities as detailed in §4.10 of the Title V permit application.

**Table 5: Insignificant Activities**

Category	Description of Insignificant Activities	Quantity
Mobile Sources	1. Cleaning and sweeping of streets and paved surfaces.	10
Combustion Equipment	3. Open burning in compliance with Georgia Rule 391-3-1-.02(5).	1
	4. Stationary engines burning: (i). Natural gas, gasoline, diesel which are used exclusively for emergency power generation.	1
Trade Operations	1. Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities whose emissions of hazardous air pollutants (HAPs) fall below 1,000 pounds per year	10
Maintenance, Cleaning, and Housekeeping	1. Blast-cleaning equipment using a suspension of abrasive in water and any exhaust system (or collector) serving them exclusively.	1
	2. Portable blast-cleaning equipment.	1
	4. Cold cleaners having an air/vapor interface of not more than 10 square feet and that do not use a halogenated solvent.	2
	5. Non-routine clean out of tanks and equipment for the purposes of worker entry or in preparation for maintenance or decommissioning.	2
	7. Cleaning operations: Alkaline phosphate cleaners and associated cleaners and burners.	2
Laboratories and Testing	1. Laboratory fume hood and vents associated with bench-scale laboratory equipment used for physical or chemical analysis.	2
	2. Research and development facilities, quality control testing facilities and/or small pilot projects, where combined daily emissions from all operations are not individually major or are support facilities not making significant contributions to the product of a collocated major manufacturing facility.	2
Pollution Control	1. Sanitary waste water collection and treatment systems, except incineration equipment.	1

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Category	Description of Insignificant Activities	Quantity
Industrial Operations	3. Carving , cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, shot blasting, shot peening, or polishing; ceramics, glass, leather, metals, plastics, rubber, concrete, paper stock or wood, also including roll grinding and ground wood pulping stone sharpening, provided that: <ul style="list-style-type: none"> <li>i. Activity is performed indoors; and</li> <li>ii. No significant fugitive particulate emissions enter the outdoor atmosphere; and</li> <li>iii. No visible emissions enter the outdoor atmosphere.</li> </ul>	25
	4. Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy (e.g., blueprint activity, photographic developing and microfiche).	100
	11. Equipment used for the application of a hot melt adhesive.	100
Storage Tanks and Equipment	1. All petroleum liquid storage tanks storing a liquid with a true vapor pressure of equal to or less than 0.50 psia as stored.	10
	2. All petroleum liquid storage tanks with a capacity of less than 40,000 gallons storing a liquid with a true vapor pressure of equal to or less than 2.0 psia as stored.	1
	3. All petroleum liquid storage tanks with a capacity of less than 10,000 gallons storing a petroleum liquid.	10
	4. Pressurized vessels designed to operate in excess of 30 psig storing a petroleum fuel.	10
	6. Portable drums, barrels and totes provided that the volume of each container does not exceed 550 gallons.	1000
	7. 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).	100

D. Temporary Sources

There are no temporary sources indicated.

E. Short-Term Activities

The facility has not indicated any short term activities.

F. Compliance Schedule/Progress Reports

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Not Applicable

- G. Emissions Trading  
Not Applicable

- H. Acid Rain Requirements

The facility has not indicated applicability to the acid rain requirement.

- I. Prevention of Accidental Releases

The facility is subject to the Accidental Release Prevention Program. The facility stores small amount of propane.

- J. Stratospheric Ozone Protection Requirements

The facility has listed applicability according to Section 3.11 of their Title V application.

- K. Pollution Prevention

The facility has not indicated any pollution prevention controls.

- L. Specific Conditions

All conditions have been covered elsewhere in the review.

### **VIII. General Provisions**

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.