

October 15, 2003

Kenneth F. Moses
Plant Environmental Engineer
Unilever HPC, USA
1200 Calumet Avenue
Hammond, Indiana 46320

Re: 089-17911-00229, Minor Source Modification to
Part 70 Permit - T089-6623-00229

Dear Mr. Moses:

Unilever HPC, USA was issued Part 70 operating permit T089-6623-00229 on April 19, 2002 for a soap manufacturing plant. An application to modify the source was received on July 7, 2003. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for modification at the source:

DR Technologies Scrubber/Demister System (North), Schneible Scrubber/Demister System (South), and Flex-Kleen Dust Collector Systems, DC-1053, 1054, 1055, and 1051.

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

The proposed operating conditions applicable to this emission unit are attached to this minor source modification approval. These proposed operating conditions shall be incorporated into the Part 70 operating permit as a minor permit modification in accordance with 326 IAC 2-7-12.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (219) 853-6306 and ask for Ronald Holder.

Sincerely,

Ronald L. Novak, Director
Hammond Department of Environmental Management
Air Pollution Control Division

Attachments

RH

cc: IDEM-OAQ – Permits Administration – Mindy Hahn

PART 70 MINOR SOURCE MODIFICATION

**Indiana Department of Environmental Management
Office of Air Quality**

and

**Hammond Department of Environmental Management
Air Pollution Control Division**

**Conopco, Inc. d/b/a Unilever HPC USA
1200 Calumet Avenue
Hammond, Indiana 46320**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission unit described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Minor Source Modification No.: 089-17911-00229	
Issued by:	Issuance Date: October 15, 2003
Ronald L. Novak, Director Hammond Department of Environmental Management	

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SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and the Hammond Department of Environmental Management (HDEM). The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary soap manufacturing plant.

Responsible Official:	Plant Manager
Source Address:	1200 Calumet Avenue, Hammond, Indiana 46320
Mailing Address:	1200 Calumet Avenue, Hammond, Indiana 46320
General Source Phone Number:	(219) 659-3200
SIC Code:	2841 - Soap and Other Detergents
County Location:	Lake
Source Location Status:	Attainment for Lead, CO and NO ₂ , Severe Non-Attainment for Ozone and Non-Attainment for all other criteria pollutants
Source Status:	Part 70 Permit Program Major Source under PSD and Emission Offset Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to modify and operate the following emission units and pollution control devices:

- o) Flex-Kleen Dust Collector System (DC-1053), identified as Unit 31, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1053 exhausts to stack 3A.
- p) Flex-Kleen Dust Collector System (DC-1054), identified as Unit 32, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1054 exhausts to stack 4A.

- q) Flex-Kleen Dust Collector System (DC-1055), identified as Unit 33, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1055 exhausts to stack 5A.
- t) Flex-Kleen Dust Collector System (DC-1051), identified as Unit 36, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1051 exhausts to stack 8A.
- a) DR Technologies Wet Scrubber/Demister Collection System "North Scrubber" controlling four (4) liquid Drais mixers, two (2) reactors (constructed in 1990), 10# nitrogen system relief (serving reactors, strippers, and buffer tank), and the DEFI making hotwells, identified as Unit 30. In case of a rupture disk failure, emissions from knockout tanks H-30675 and H-30676 will also be controlled by this system. This system also includes five (5) melt and hold tank vents for lines 4-7 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 8968 lbs/hr of fatty acid material handled and exhausts to Stack 2A.
- b) Schneible Wet Scrubber/Demister Collection System "South Scrubber" controlling three (3) liquid Drais mixers, two (2) reactors (constructed in 1985), an 8" water nitrogen header (serving reactors, strippers, and buffer tank), identified as Unit 17. In case of a rupture disk failure, emissions from knockout tanks H-30673 and H-30674 will also be controlled by this system. This system also includes six (6) melt and hold tank vents for lines 1-3 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 5736 lbs/hr of fatty acid material handled and exhausts to Stack 19.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This modification does not include any insignificant activities, as defined in 326 IAC 2-7-1(21).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because it is a major source, as defined in 326 IAC 2-7-1(22).

SECTION D.3

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

Manufacturing Processes controlled by Dust Collector Systems, identified as follows:

- o) Flex-Kleen Dust Collector System (DC-1053), identified as Unit 31, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1053 exhausts to stack 3A.
- p) Flex-Kleen Dust Collector System (DC-1054), identified as Unit 32, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1054 exhausts to stack 4A.
- q) Flex-Kleen Dust Collector System (DC-1055), identified as Unit 33, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1055 exhausts to stack 5A.
- t) Flex-Kleen Dust Collector System (DC-1051), identified as Unit 36, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, remelt hoppers, a transfer silo, and other miscellaneous points associated with maintenance clean up. Maximum capacity of material through the equipment being controlled is 5890 pounds per hour. DC-1051 exhausts to stack 8A.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Particulate Matter (PM) [Hammond Ordinance No. 3522]

Pursuant to the Hammond Air Quality Control Ordinance No. 3522 (as amended), PM emissions from the Zinc Oxide Catalyst Weigh Station, Unit 25, shall not exceed 0.021 pounds per hour or 0.092 tons per year; PM emissions from the Detergent Bar Soap Facility Milling and Pelletizing, Unit 26, shall not exceed 0.79 pounds per hour or 3.45 tons per year; and PM emissions from the No.1 & No. 2 Noodle Bins, Unit 48, shall not exceed 0.006 pounds per hour or 0.0263 tons per year.

These local limits are not state or federally enforceable. They are only enforceable by HDEM.

D.3.2 Particulate Matter (PM10) Limit [Hammond Ordinance No. 3522]

Pursuant to Hammond Ordinance No. 3522, PM10 emissions from the No. 1 and No. 2 Noodle Bins, Unit 48, shall not exceed 0.0042 pounds per hour or 0.0184 tons per year.

These local limits are not state or federally enforceable. They are only enforceable by HDEM.

D.3.3 Particulate Matter less than ten (10) microns (PM₁₀) Limit [326 IAC 6-1-2(a)]

Pursuant to Minor Source Modification 089-17305-00229 and 326 IAC 6-1-2(a), PM₁₀ emissions from the Soap Noodle Bagging Silo Dust Collector System (DC-31613) shall not exceed 0.03 gr/dscf, which is equivalent to 0.62 lbs/hr.

D.3.4 Particulate Matter less than 10 microns (PM₁₀) Lake County Rule [326 IAC 6-1-10.1(d)]

Pursuant to 326 IAC 6-1-10.1(d), the PM₁₀ emissions from the manufacturing emission units shall not exceed the following emission limitations:

Emission Unit Description	Emission Unit ID #	PM ₁₀ Emission Limit (gr/dscf)	PM ₁₀ Emission Limit (lbs/hr)
Soap Rework Grinding Process	11	0.020	0.250
Three (3) Vacuum System Soap Dryers	12	0.020	0.120
Five (5) Noodles Bins, Two (2) Rework Systems, and One (1) Scrap Soap Kettle	13	0.020	0.860
Tallow Finishing Lines 8, 9, 10, 11, 12 and 13	14/15	0.020*	1.540*
Soap Noodle Bin No. 1 Dust Collection System	18	0.020	0.210
Soap Noodle Bin No. 2 Dust Collection System	19	0.020	0.210
Soap Noodle Bin No. 3 Dust Collection System	20	0.020	0.210
Chip Mixer No. 1	21	0.020**	0.720**
Chip Mixer No. 2	22	0.020**	0.720**
Chip Mixer No. 3 and 4	23	0.020**	0.720**
Powder Dye Mixing System	24	0.020	0.130
Zinc Oxide Catalyst Weigh Station and Three Chill Rolls	25	0.020	0.800
Detergent Bar Soap Facility Milling and Pelletizing	26	0.020	1.03
Three (3) Chill Roll Apron Conveyors and Screw Conveyors	27	0.020	1.090
Flex-Kleen Dust Collector System (DC-1053)	31	0.020	0.940
Flex-Kleen Dust Collector System (DC-1054)	32	0.020	0.940
Flex-Kleen Dust Collector System (DC-1055)	33	0.020	0.940
Flex-Kleen Dust Collector System (DC-1056)	34	0.020	0.940
Flex-Kleen Dust Collector System (DC-1052)	35	0.020	2.130
Flex-Kleen Dust Collector System (DC-1051)	36	0.020	2.130

*Combined limit for Units 14 and 15, exhausting to Stacks 16 and 17

**Combined limit for Units 21, 22 and 23, exhausting to Stack 23

D.3.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Determination Requirements

D.3.6 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Within 36 months after issuance of this permit, a performance test shall be conducted for Units 11, 12, 13, 14, 18, 21, 26, and 27 in order to demonstrate compliance with Conditions D.3.2 and D.3.3. The Permittee shall perform PM-10 testing utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensable PM-10. Testing shall be conducted in accordance with Section C – Performance Testing.

D.3.7 Particulate Matter (PM)

The dust collection systems for PM control shall be in operation and control emissions from these facilities at all times when the facilities are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.8 Visible Emissions Notations

- (a) Visible emission notations of the stack exhausts from these facilities shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.3.9 Parametric Monitoring

The Permittee shall record the total static pressure drop across each baghouse used in conjunction with the manufacturing processes, at least once weekly when the processes are in operation when venting to the atmosphere. When for any one reading, the pressure drop across each baghouse is outside the normal range of 1.0 and 8.0 inches of water, a range established during the latest stack test or as recommended by the equipment manufacturer, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM – OAQ and HDEM and shall be calibrated at least once every six (6) months.

D.3.10 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the manufacturing processes when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. All defective bags shall be replaced.

D.3.11 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.12

Record Keeping Requirements

- (a) To document compliance with Condition D.3.8, the Permittee shall maintain records of daily visible emission notations of the stack exhaust from each facility.
- (b) To document compliance with Condition D.3.9, the Permittee shall maintain the following:
 - (1) Weekly records of the following operational parameters during normal operation when venting to the atmosphere:
 - (A) Inlet and outlet differential static pressure; and
 - (B) Cleaning cycle operation.
 - (2) Documentation of the dates vents are redirected.
- (c) To document compliance with Condition D.3.10, the Permittee shall maintain records of the results of inspections required under Condition D.3.10 and the dates the vents are redirected.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

Manufacturing Processes controlled by wet scrubber systems:

- a) DR Technologies Wet Scrubber/Demister Collection System “North Scrubber” controlling four (4) liquid Drais mixers, two (2) reactors (constructed in 1990), 10# nitrogen system relief (serving reactors, strippers, and buffer tank), and the DEFI making hotwells, identified as Unit 30. In case of a rupture disk failure, emissions from knockout tanks H-30675 and H-30676 will also be controlled by this system. This system also includes five (5) melt and hold tank vents for lines 4-7 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 8968 lbs/hr of fatty acid material handled and exhausts to Stack 2A.
- b) Schneible Wet Scrubber/Demister Collection System “South Scrubber” controlling three (3) liquid Drais mixers, two (2) reactors (constructed in 1985), an 8” water nitrogen header (serving reactors, strippers, and buffer tank), identified as Unit 17. In case of a rupture disk failure, emissions from knockout tanks H-30673 and H-30674 will also be controlled by this system. This system also includes six (6) melt and hold tank vents for lines 1-3 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 5736 lbs/hr of fatty acid material handled and exhausts to Stack 19.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 Particulate Matter less than 10 microns (PM₁₀) Lake County Rule [326 IAC 6-1-10.1(d)]
 Pursuant to 326 IAC 6-1-10.1(d), the PM₁₀ emissions from the manufacturing emission units shall not exceed the following emission limitations:

Emission Unit Description	Emission Unit ID #	PM ₁₀ Emission Limit (gr/dscf)	PM ₁₀ Emission Limit (lbs/hr)
DR Technologies Scrubber/Demister System (North)	30 (Stack 2A)	0.030	1.030
Schneible Scrubber/Demister System (South)	17 (Stack 19)	0.030	1.030

D.4.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Determination Requirements

D.4.3 Particulate Matter (PM)

The wet scrubber collector system for PM control shall be in operation and control emissions from these facilities at all times that the facilities are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.4.4 Visible Emissions Notations

- (a) Visible emission notations of the exhaust from Stacks 2A and 19 shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.4.5 Parametric Monitoring

The Permittee shall record the flow rate and total static pressure drop across each scrubber (Units 30 and 17) at least once daily when in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range of (0.5 and 12) inches of water for Unit 30 and (5.0 and 25) inches of water for Unit 17 or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.4.6 Scrubber Inspections

An inspection shall be performed each calendar quarter of all scrubbers controlling these facilities. Defective scrubber part(s) shall be replaced. A record shall be kept of the results of the inspection and the number of scrubber part(s) replaced.

D.4.7 Scrubber Failure Detection

In the event that a scrubber's failure has been observed:

- (a) The affected unit will be shut down immediately until the failed unit has been replaced.
- (b) Based upon the confirmed findings of an inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.8 Record Keeping Requirements

- (a) To document compliance with Condition D.4.4 the Permittee shall maintain daily records of visible emission notations of the stack exhausts from each facility.
- (b) To document compliance with Condition D.4.5, the Permittee shall maintain the following:
 - (1) Weekly records of the following operational parameters during normal operation when venting to the atmosphere:
 - (A) Inlet and outlet differential static pressure;
 - (B) Air to water ratio; and
 - (C) Flow rate.
- (c) To document compliance with Condition D.4.6, the Permittee shall maintain records of the results of inspections.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**Indiana Department of Environmental Management
Office of Air Quality**

and

**Hammond Department of Environmental Management
Air Pollution Control Division**

**Technical Support Document (TSD) for a Minor Source Modification and
Minor Permit Modification to a Part 70 Operating Permit**

Source Background and Description

Source Name:	Unilever Home & Personal Care - USA
Source Location:	1200 Calumet Avenue, Hammond, Indiana 46320
County:	Lake
SIC Code:	2841 - Soap and Other Detergents
Operation Permit No.:	T089-6623-00229
Operation Permit Issuance Date:	April 19, 2002
Minor Source Modification	089-17911-00229
Minor Permit Modification	089-17909-00229
Permit Reviewer:	Ronald Holder, HDEM

The Hammond Department of Environmental Management (HDEM) has reviewed an application from Unilever HPC, USA requesting the necessary permits to modify two (2) scrubber/demister systems and add a soap noodle transfer silo. The modification will increase bar soap production and require a minor source modification and a minor permit modification of their Part 70 permit.

The bar soap manufacturing and finishing systems utilize reactors, strippers, mixers, chill rolls, refiners, silos, and packaging lines. Unilever proposes to increase bar soap production by adding a buffer tank and two (2) melt tanks that will vent to the scrubber systems and by installing a soap noodle transfer silo that will vent to existing dust collection systems.

A connection will be added to knock-out tank H-30673, to serve the rupture discs on the new buffer tank. Nitrogen will pass to the knock-out tank only if a double rupture disc on the buffer tank fails, which is not a normal event. A connection will also be made to the existing 8" nitrogen header, which will provide the new buffer tank with nitrogen blanketing. A connection to the 10# nitrogen system will also be made to service the new buffer tank. The nitrogen will be used to purge air from the buffer tank after a shutdown. These systems are serviced by one or both of the scrubber/demister systems but do not contribute substantially to the PM10 potential emissions to the scrubbers.

To allow for a more balanced production capability between the two (2) systems, the melt tank venting systems will be split approximately evenly between these "north" and "south" scrubbers. The melt tanks do not contribute appreciably to the PM10 loading to the scrubbers.

The "Drais" mixers, numbers 5, 6, and 7 will be piped to the "north" scrubber. The preponderance of PM10 emissions come from these mixers plus mixer number 4 which is currently being serviced by the "south" scrubber. The increase of potential emissions is based on the increase of bar soap production and the proportionate increase of fatty acid emissions to the scrubber/demister systems (see calculations Appendix A).

This review will also serve to correctly identify the "north" scrubber as a DR Technologies unit.

History

On July 7, 2003, Unilever HPC, USA submitted an application to the HDEM requesting approval to modify the "north" and "south" scrubber/demister systems, add a transfer silo, and have their current Part 70 permit modified accordingly. Unilever submitted a Part 70 permit application on September 18, 1996. The Part 70 permit T089-6623-00229 was issued on April 19, 2002.

Existing Approvals

The source was issued a Part 70 Operating Permit (T089-6623-00229) on April 19, 2002. The source has since received the following:

First Administrative Amendment: 089-15624-00229, issued on July 16, 2002,
First Minor Permit Modification: 089-16108-00229, issued on June 20, 2003,
First Minor Source Modification: 089-17305-00229, issued on August 18, 2003, and
Second Minor Permit Modification: 089-17907-00229, not issued yet.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Part 70 Minor Source Modification and Minor Permit Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on July 7, 2003. Additional information was received on August 14, 2003.

Stack Summary (this modification does not change this existing stack information)

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
19	Schneible Scrubber/Demister (South)	101'	1.0'	4000	Ambient
2A	DR Technologies Scrubber/Demister (North)	101'	1.0'	4000	Ambient
3A	Flex-Kleen (DC-1053) System	98.5'	1.67'	5600	Ambient
4A	Flex-Kleen (DC-1054) System	98.5'	1.67'	5600	Ambient
5A	Flex-Kleen (DC-1055) System	98.5'	1.67'	5600	Ambient
8A	Flex-Kleen (DC-1051) System	98.5'	2.0'	12,450	Ambient

Emission Calculations

See Appendix A of this document for detailed emissions calculations (four (4) pages).

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	20.7
PM-10	20.7
SO ₂	0
VOC	0
CO	0
NO _x	0

Justification for Modification

The Part 70 Operating permit is being modified through Part 70 Minor Source Modification 089-17911-00229 and Minor Permit Modification 089-17909-00229.

The minor source modification is being performed pursuant to 326 IAC 2-7-10.5(d)(4)(A), a modification that would have a potential to emit less than twenty-five (25) tons per year and equal to or greater than five (5) tons per year of either particulate matter (PM) or particulate matter less than ten (10) microns (PM₁₀). The minor permit modification is being performed pursuant to 326 IAC 2-7-12(b)(1), a modification that does not violate any applicable requirement and does not involve significant changes to existing monitoring, reporting, or record keeping requirements.

County Attainment Status

The source is located in Lake County.

40 CFR 81.315 – (Indiana)

Pollutant	Status
PM ₁₀	Moderate Nonattainment
SO ₂	Primary Nonattainment
NO _x	Unclassifiable/Attainment
Ozone*	Severe Nonattainment
CO	Unclassifiable/Attainment
Lead	Attainment

Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as severe non-attainment for ozone, moderate non-attainment for particulates less than ten (10) microns in diameter (PM₁₀), and primary non-attainment for SO₂. Therefore, VOC, PM₁₀, and SO₂ emissions are reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Lake County has also been designated as attainment for oxides of nitrogen (NO_x) and carbon monoxide (CO). Therefore, NO_x and CO emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM-10	84
SO ₂	773
VOC	8
CO	65
NO _x	302

This is the plant-wide potential to emit after control, at maximum rate, and 8760 hours.

This existing source is a major stationary source for the purposes of 326 IAC 2-3 (Emission Offset) because it emits, or has the potential to emit, one hundred (100) tons per year or more of sulfur dioxide (SO₂). Lake County is classified as primary non-attainment for sulfur dioxide (SO₂).

This existing source is also a major stationary source for the purposes of 326 IAC 2-2 (Prevention of Significant Deterioration - PSD) because it has the potential to emit, two hundred fifty (250) tons per year or more of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x). This source is not one of the twenty-eight (28) listed source categories (Chemical Process Plant) in the definition of “major stationary source” in 326 IAC 2-2 because they do not produce a chemical.

These emissions are based on the Unilever’s 2002 emissions statement.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Process/facility	(tons per year)					
	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Schneible Scrubber/Demister (South)	0.18	0	0	0	0	0
DR Technologies Scrubber/Demister (North)	0.27	0	0	0	0	0
Flex-Kleen (DC-1053) System	0.018	0	0	0	0	0
Flex-Kleen (DC-1054) System	0.018	0	0	0	0	0
Flex-Kleen (DC-1055) System	0.018	0	0	0	0	0
Flex-Kleen (DC-1051) System	0.018	0	0	0	0	0
PSD and Emission Offset Significant Levels	15	40	25	100	40	0.6

This is the potential to emit after control for each item. Each system has a PM₁₀ limit per 326 IAC 6-1-10.1(d) in the existing Part 70 permit and uses controls to meet that limit. Therefore, the existing controls are federally enforceable.

This modification to an existing major stationary source is not a major modification because the emissions increase is less than the PSD and Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-2 and 326 IAC 2-3, PSD and Emission Offset requirements do not apply.

This emissions increase accounts for the “increased utilization” of all other items venting to these control systems because the maximum rate increase is the total increase of particulates loading to the control devices due to the proportionate increase of soap production.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this permit modification.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this permit modification.

State Rule Applicability - Individual Facilities

326 IAC 2-2, Prevention of Significant Deterioration (PSD) Requirements

326 IAC 2-2, Prevention of Significant Deterioration (PSD) Requirements do not apply to this modification because the emissions increase is less than the PSD significant levels.

326 IAC 2-3 Emission Offset

326 IAC 2-3, Emission Offset Requirements do not apply to this modification because the emissions increase is less than the Emission Offset significant levels.

326 IAC 2-4.1, Major Sources of Hazardous Air Pollutant

326 IAC 2-4.1-1, New source toxics control requirements do not apply because this modification is not a new construction or reconstruction of a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.41.

326 IAC 6-1-10.1(d) Lake County PM₁₀ Emission Requirements

Each of the existing Wet Scrubber/Demister Collector Systems (North and South) has an existing PM₁₀ emission limit of 1.03 lbs/hr (0.03 gr/dscf) as stated in this rule.

Three (3) of the existing Flex-Kleen Dust Collection Systems have existing PM₁₀ emission limits of 0.94 lbs/hr (0.02 gr/dscf) and the fourth has a PM₁₀ emission limit of 2.13 lbs/hr (0.02 gr/dscf).

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The descriptions for the four (4) existing Dust Collection Systems and the two (2) existing Scrubber/Demister Systems will need to be modified, corrected, and updated accordingly. The emissions limitations and standards do not change.

The existing compliance determination and monitoring requirements in Sections D.3 and D.4 of the existing Part 70 permit are adequate for the determination of compliance and will not need to be changed.

These existing and unchanged compliance determination and monitoring requirements are:

Section D.3 Manufacturing Processes Controlled by Dust Collection Systems

Compliance Determination Requirements

D.3.6 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Within 36 months after issuance of this permit, a performance test shall be conducted for Units 11, 12, 13, 14, 18, 21, 26, and 27 in order to demonstrate compliance with Conditions D.3.2 and D.3.3. The Permittee shall perform PM-10 testing utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensable PM-10. Testing shall be conducted in accordance with Section C – Performance Testing.

D.3.7 Particulate Matter (PM)

The dust collection systems for PM control shall be in operation and control emissions from these facilities at all times when the facilities are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.8 Visible Emissions Notations

- (a) Visible emission notations of the stack exhausts from these facilities shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.3.9 Parametric Monitoring

The Permittee shall record the total static pressure drop across each baghouse used in conjunction with the manufacturing processes, at least once weekly when the processes are in operation when venting to the atmosphere. When for any one reading, the pressure drop across each baghouse is outside the normal range of 1.0 and 8.0 inches of water, a range established during the latest stack test or as recommended by the equipment manufacturer, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM – OAQ and HDEM and shall be calibrated at least once every six (6) months.

D.3.10 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the manufacturing processes when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. All defective bags shall be replaced.

D.3.11 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Section D.4 Manufacturing Processes Controlled by Wet Scrubber/Demister Systems

Compliance Determination Requirements

D.4.3 Particulate Matter (PM)

The wet scrubber collector system for PM control shall be in operation and control emissions from these facilities at all times that the facilities are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.4.4 Visible Emissions Notations

- (a) Visible emission notations of the exhaust from Stacks 2A and 19 shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.4.5 Parametric Monitoring

The Permittee shall record the flow rate and total static pressure drop across each scrubber (Units 30 and 17) at least once daily when in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range of (0.5 and 12) inches of water for Unit 30 and (5.0 and 25) inches of water for Unit 17 or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.4.6 Scrubber Inspections

An inspection shall be performed each calendar quarter of all scrubbers controlling these facilities. Defective scrubber part(s) shall be replaced. A record shall be kept of the results of the inspection and the number of scrubber part(s) replaced.

D.4.7 Scrubber Failure Detection

In the event that a scrubber's failure has been observed:

- (a) The affected unit will be shut down immediately until the failed unit has been replaced.
- (b) Based upon the confirmed findings of an inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Proposed Changes: (affected pages 1, 9,10, 44, 45, and 49)

The following changes were agreed to and made as the Third Minor Permit Modification for this source (~~strikeout~~ added to show what was deleted and **bold** added to show what was added).

1. The cover page (page 1) was modified to add the issuance date of this Third Minor Permit Modification, and to show the affected pages.
2. On page 9 of 69, in Section A.2, Emission Units and Pollution Control Equipment Summary, the soap noodle transfer silo was added to the descriptions of the Flex-Kleen Dust Collector Systems DC-1053, DC-1054, and DC-1055 (paragraphs o through q) as follows:
 - o) Flex-Kleen Dust Collector System (DC-1053), identified as Unit 31, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of material through the equipment being controlled is of 5,976 5890** pounds per hour. ~~and DC-1053 exhaustings~~ to stack 3A.

- p) Flex-Kleen Dust Collector System (DC-1054), identified as Unit 32, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of material through the equipment being controlled is of 5,976 5890** pounds per hour. ~~and DC-1054 exhaustings~~ to stack 4A.
- q) Flex-Kleen Dust Collector System (DC-1055), identified as Unit 33, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of material through the equipment being controlled is of 5,976 5890** pounds per hour. ~~and DC-1055 exhaustings~~ to stack 5A.
3. On page 10 of 69, in Section A.2, Emission Units and Pollution Control Equipment Summary, the soap noodle transfer silo was added to the descriptions of the Flex-Kleen Dust Collector System DC-1051 (paragraph t) as follows:
- t) Flex-Kleen Dust Collector System (DC-1051), identified as Unit 36, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of material through the equipment being controlled is of 5,976 5890** pounds per hour. ~~and DC-1051 exhaustings~~ to stack 8A.
4. On page 10 of 69, in Section A.2, Emission Units and Pollution Control Equipment Summary, the descriptions of the Wet Scrubber/Demister Systems were modified as follows:
- a) ~~Seven (7) liquid "Drais" mixers, two (2) reactors, and two (2) strippers (for Lines 4 through 7), identified as Unit 30, constructed in 1990, controlled by a Schneible wet scrubber and demister collection system. In case of a rupture disk failure, emissions from knockout tanks H-30675 and H-30676 will also be controlled by this system. This system also includes Line 4 melt tank and hold tank, and Lines 5, 6, and 7 melt tanks. In addition, the three (3) Holding Tanks and Melt Tanks from Lines 1, 2, & 3 are tied into this system for housekeeping purposes. The scrubber demister system has a maximum capacity of 1,743 pounds per hour of material handled and exhausts to Stack 2A.~~
- a) **DR Technologies Wet Scrubber/Demister Collection System "North Scrubber"** controlling four (4) liquid Drais mixers, two (2) reactors (constructed in 1990), 10# nitrogen system relief (serving reactors, strippers, and buffer tank), and the DEFI making hotwells, identified as Unit 30. In case of rupture disc failure, emissions from knock-out tanks H-30675 and H-30676 will also be controlled by this system. This system also includes five (5) melt and hold tank vents for lines 4-7 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 8,968 lbs/hr of fatty acid material handled and exhausts to Stack 2A.

- b) ~~Three (3) liquid "Drais" mixers, two (2) reactors, and (2) two strippers (for Lines 1 through 3), identified as Unit 17, constructed in 1985, controlled by a Schneible wet scrubber and demister collector system. In case of a rupture disk failure, emissions from knockout tanks H-30673 and H-30674 will also be controlled by this system. System has a maximum capacity of 5,049 pounds per hour of material handled and exhausts to Stack 19.~~
- b) **Schneible Wet Scrubber/Demister Collection System "South Scrubber" controlling three (3) liquid Drais mixers, two (2) reactors (constructed in 1985), an 8" water nitrogen header (serving reactors, strippers, and buffer tank), identified as Unit 17. In case of rupture disc failure, emissions from knock-out tanks H-30673 and H-30674 will also be controlled by this system. This system also includes six (6) melt and hold tank vents for lines 1-3 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 5,736 lbs/hr of fatty acid material handled and exhausts to Stack 19.**
5. On page 44 of 69, in the Facility Description Box of Section D.3, the descriptions of three (3) of the existing Flex-Kleen Dust Collector Systems (o, p, and q) were modified as follows:
- o) Flex-Kleen Dust Collector System (DC-1053), identified as Unit 31, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of material through the equipment being controlled is of 5,976 5890** pounds per hour. ~~and DC-1053 exhaustings to stack 3A.~~
- p) Flex-Kleen Dust Collector System (DC-1054), identified as Unit 32, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of material through the equipment being controlled is of 5,976 5890** pounds per hour. ~~and DC-1054 exhaustings to stack 4A.~~
- q) Flex-Kleen Dust Collector System (DC-1055), identified as Unit 33, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of material through the equipment being controlled is of 5,976 5890** pounds per hour. ~~and DC-1055 exhaustings to stack 5A.~~
6. On page 45 of 69, in the Facility Description Box of Section D.3, the description of the Flex-Kleen Dust Collector System (t) was modified as follows:
- t) Flex-Kleen Dust Collector System (DC-1051), identified as Unit 36, originally constructed in 1990, and modified in 2001 to be part of a dust collector header system integrating dust collectors DC-1051, DC-1053, DC-1054, and DC-1055. The dust collector header collects dust from the soap noodle bins, rework feed hoppers, re-melt hoppers, **the transfer silo**, and other miscellaneous pick-up points associated with maintenance clean up. ~~with a m~~**Maximum capacity of**

material through the equipment being controlled is of 5,976 5890 pounds per hour. and DC-1051 exhaustings to stack 8A.

7. On page 49 of 69, in the Facility Description Box of Section D.4, the descriptions of the existing Scrubber/Demister Systems were modified as follows:

Facility Description [326 IAC 2-7-5(15)]:

Manufacturing Processes controlled by wet scrubber systems:

- a) ~~Seven (7) liquid "Drais" mixers, two (2) reactors, and two (2) strippers (for Lines 4 through 7), identified as Unit 30, constructed in 1990, controlled by a Schneible wet scrubber and demister collection system. In case of a rupture disk failure, emissions from knockout tanks H-30675 and H-30676 will also be controlled by this system. This system also includes Line 4 melt tank and hold tank, and Lines 5, 6, and 7 melt tanks. In addition, the three (3) Holding Tanks and Melt Tanks from Lines 1, 2, & 3 are tied into this system for housekeeping purposes. The scrubber demister system has a maximum capacity of 1,743 pounds per hour of material handled and exhausts to Stack 2A.~~
- a) **DR Technologies Wet Scrubber/Demister Collection System "North Scrubber" controlling four (4) liquid Drais mixers, two (2) reactors (constructed in 1990), 10# nitrogen system relief (serving reactors, strippers, and buffer tank), and the DEFI making hotwells, identified as Unit 30. In case of rupture disc failure, emissions from knock-out tanks H-30675 and H-30676 will also be controlled by this system. This system also includes five (5) melt and hold tank vents for lines 4-7 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 8,968 lbs/hr of fatty acid material handled and exhausts to Stack 2A.**
- b) ~~Three (3) liquid "Drais" mixers, two (2) reactors, and (2) two strippers (for Lines 1 through 3), identified as Unit 17, constructed in 1985, controlled by a Schneible wet scrubber and demister collector system. In case of a rupture disk failure, emissions from knockout tanks H-30673 and H-30674 will also be controlled by this system. System has a maximum capacity of 5,049 pounds per hour of material handled and exhausts to Stack 19.~~
- b) **Schneible Wet Scrubber/Demister Collection System "South Scrubber" controlling three (3) liquid Drais mixers, two (2) reactors (constructed in 1985), an 8" water nitrogen header (serving reactors, strippers, and buffer tank), identified as Unit 17. In case of rupture disc failure, emissions from knock-out tanks H-30673 and H-30674 will also be controlled by this system. This system also includes six (6) melt and hold tank vents for lines 1-3 for housekeeping purposes. The system controlled by this scrubber/demister has a maximum capacity of 5,736 lbs/hr of fatty acid material handled and exhausts to Stack 19.**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

8. On page 49 of 69, in Section D.4.1, Emissions Limitations and Standards, the descriptions of the existing Scrubber/Demister Systems were modified as follows:

- D.4.1 Particulate Matter less than 10 microns (PM₁₀) Lake County Rule [326 IAC 6-1-10.1(d)]
Pursuant to 326 IAC 6-1-10.1(d), the PM₁₀ emissions from the manufacturing emission units shall not exceed the following emission limitations:

Emission Unit Description	Emission Unit ID #	PM ₁₀ Emission Limit (gr/dscf)	PM ₁₀ Emission Limit (lbs/hr)
Schneible Wet Scrubber controlling seven (7) liquid "Drais" mixers, two (2) reactors, and two (2) strippers DR Technologies Scrubber/Demister System (North)	30 (Stack 2A)	0.030	1.030
Schneible Wet Scrubber controlling three (3) liquid "Drais" mixers, two (2) reactors, and (2) two strippers Schneible Scrubber/Demister System (South)	17 (Stack 19)	0.030	1.030

Conclusion

The modifications to the DR Technologies Scrubber/Demister System, Schneible Scrubber/Demister System, and Flex-Kleen Dust Collector Systems shall be subject to the conditions of the attached Part 70 Minor Source Modification **089-17911-00229** or Part 70 Minor Permit Modification **089-17909-00229**.

Appendix A: Calculations of Emissions Increase due to Modification

Conopco, Inc. dba Unilever HPC USA
 1200 CALUMET AVENUE
 HAMMOND, IN 46320

PLANT ID NO: 089-00229

Minor Source Mod 089-17911-00229
 Minor Permit Mod 089-17909-00229

Unilever TV T089-6623-00229

CALCULATIONS BY: Ronald Holder

YEAR OF DATA: **review**

****NOTES****

EF: EMISSION FACTOR
 CE: CONTROL EFFICIENCY
 MDR: MAXIMUM DESIGN RATE
 MDC: MAXIMUM DESIGN CAPACITY
 Ts: STACK DISCHARGE TEMPERATURE
 UNITS FOR EMISSIONS ARE IN (TPY) EXCEPT WHERE GIVEN

Existing Scrubber/Demister Systems

P17; S1: **Schneible Wet Scrubber & Demister (South)(Dove Side)** MDR (T/hr): **2.525** STACK ID (DIAM:HEIGHT): 1.16' : 101'
Stack 19, Bldg. 15 YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 4,000
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

POLLUTANT	EF(LB/T)	CE (%)	POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
			(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	1.2	0.99	3.0	72.7	13.3	0.03	0.13	0.001	0.00	0.00
PM10	1.2	0.99	3.0	72.7	13.3	0.03	0.13	0.001	1.03	4.51
SOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
NOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
VOC	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
CO	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
LEAD	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00

existing emission rate based on (50,135 tons soap/year) x (0.498 lbs fatty acids/ton of soap) ÷ (8192 operating hours) = 3.05 lbs/hr. Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P30; S1: **DR Technologies Wet Scrubber & Demister (North)** MDR (T/hr): **0.8715** STACK ID (DIAM:HEIGHT): 1.0' : 103.5'
Stack 2A, Bldg. 15 (Lever Side) YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 4,000
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

POLLUTANT	EF(LB/T)	CE (%)	POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
			(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	2.9	0.99	2.5	60.7	11.1	0.03	0.11	0.001	0.00	0.00
PM10	2.9	0.99	2.5	60.7	11.1	0.03	0.11	0.001	1.03	4.51
SOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
NOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
VOC	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
CO	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
LEAD	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00

existing emission rate based on (42,000 tons soap/year) x (0.498 lbs fatty acids/ton of soap) ÷ (8192 operating hours) = 2.55 lbs/hr. Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

Scrubber/Demister Systems as Modified

P17; S1: **Schneible Wet Scrubber & Demister (South)(Dove Side)**
Stack 19, Bldg. 15

MDR (T/hr): **2.868**
 YEARLY PROD (T/yr): N/A

STACK ID (DIAM:HEIGHT): 1.16' : 101'
 FLOWRATE (ACFM): 4,000
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

POLLUTANT	EF(LB/T)	CE (%)	POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
			(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	1.4	0.99	4.0	96.4	17.6	0.04	0.18	0.001	0.00	0.00
PM10	1.4	0.99	4.0	96.4	17.6	0.04	0.18	0.001	1.03	4.51
SOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
NOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
VOC	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
CO	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
LEAD	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00

new emission rate
 based on (70,576 tons soap/year) x (0.498 lbs fatty acids/ton of soap) ÷ (8760 operating hours) = 4.01 lbs/hr.
 Loading to the Schneible (south) scrubber increases from 5049 lbs/hr to 5736 lbs/hr.

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P30; S1: **DR Technologies Wet Scrubber & Demister (North)**
Stack 2A, Bldg. 15 (Lever Side)

MDR (T/hr): **4.484**
 YEARLY PROD (T/yr): N/A

STACK ID (DIAM:HEIGHT): 1.0' : 103.5'
 FLOWRATE (ACFM): 4,000
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

POLLUTANT	EF(LB/T)	CE (%)	POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
			(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	1.4	0.99	6.3	150.7	27.5	0.06	0.27	0.002	0.00	0.00
PM10	1.4	0.99	6.3	150.7	27.5	0.06	0.27	0.002	1.03	4.51
SOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
NOx	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
VOC	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
CO	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00
LEAD	0	0	0.0	0.0	0.0	0.00	0.00	N/A	0.00	0.00

new emission rate
 based on (110,334 tons soap/year) x (0.498 lbs fatty acids/ton of soap) ÷ (8760 operating hours) = 6.27 lbs/hr.
 Loading to the DR Technologies (north) scrubber increases from 1743 lbs/hr to 8968 lbs/hr.

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

Emissions Increase due to Modification

	POTENTIAL EMISSIONS					
	BEFORE CONTROLS			AFTER CONTROLS		
	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)
PM10	4.7	113.7	20.7	0.05	0.21	N/A

existing controls are federally enforceable
 they are required in the existing Part 70 permit.
 so emissions increase is 0.21 TPY.

Existing Dust Collector Header System

P31; S1: Flex-Kleen (DC-1053) System
Stack 3A, Bldg. 15A MDR (T/hr): 2.988 STACK ID (DIAM:HEIGHT): 1.67' : 98.5'
 YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 5,600
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0008	0.94	4.12

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P32; S1: Flex-Kleen (DC-1054) System
Stack 4A, Bldg. 15A MDR (T/hr): 2.988 STACK ID (DIAM:HEIGHT): 1.67' : 98.5'
 YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 5,600
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0008	0.94	4.12

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P33; S1: Flex-Kleen (DC-1055) System
Stack 5A, Bldg. 15A MDR (T/hr): 2.988 STACK ID (DIAM:HEIGHT): 1.67' : 98.5'
 YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 5,600
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0008	0.94	4.12

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P36; S1: Flex-Kleen (DC-1051) System
Stack 8A, Bldg. 15A MDR (T/hr): 2.988 STACK ID (DIAM:HEIGHT): 2.0' : 98.5'
 YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 12,450
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)		
PM	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	101.1	18.5	0.004	0.018	0.0001	2.13	9.33

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

Dust Collector Header System as Modified

P31; S1: **Flex-Kleen (DC-1053) System** MDR (T/hr): 2.945 STACK ID (DIAM:HEIGHT): 1.67' : 98.5'
Stack 3A, Bldg. 15A YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 5,600
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)	(lbs/hr)	(TPY)
PM	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0008	0.94	4.12

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P32; S1: **Flex-Kleen (DC-1054) System** MDR (T/hr): 2.945 STACK ID (DIAM:HEIGHT): 1.67' : 98.5'
Stack 4A, Bldg. 15A YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 5,600
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)	(lbs/hr)	(TPY)
PM	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0008	0.94	4.12

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P33; S1: **Flex-Kleen (DC-1055) System** MDR (T/hr): 2.945 STACK ID (DIAM:HEIGHT): 1.67' : 98.5'
Stack 5A, Bldg. 15A YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 5,600
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)	(lbs/hr)	(TPY)
PM	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0008	0.94	4.12

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

P36; S1: **Flex-Kleen (DC-1051) System** MDR (T/hr): 2.945 STACK ID (DIAM:HEIGHT): 2.0' : 98.5'
Stack 8A, Bldg. 15A YEARLY PROD (T/yr): N/A FLOWRATE (ACFM): 12,450
 Ts(°F): 70

PERMITTED OPERATING HRS: **8760** hr/yr

SCC NO. 3-01-009-99			POTENTIAL EMISSIONS						ALLOWABLE	
			BEFORE CONTROLS			AFTER CONTROLS			(lbs/hr)	(TPY)
POLLUTANT	EF(LB/T)	CE (%)	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)	(lbs/hr)	(TPY)
PM	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0001	0.00	0.00
PM10	1.41	0.999	4.2	99.7	18.2	0.004	0.018	0.0001	2.13	9.33

Applicable Reg: PM10: 326 IAC 6-1-10.1(d)
 All particulate presumed to be PM10.

Emissions Increase	POTENTIAL EMISSIONS					
	BEFORE CONTROLS			AFTER CONTROLS		
	(lbs/hr)	(lbs/day)	(TPY)	(lbs/hr)	(TPY)	(gr/dscf)
PM10	-0.2	-5.8	-1.1	-0.0002	-0.0011	0.0000

Existing emissions were evaluated at a max rate of 5976 lbs/hr. The new rate of 5890 lbs/hr does not increase the PTE. Federally enforceable emission limitation and controls in existing TV permit will remain the same.