

217/782-2113

"REVISED"
TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT¹

PERMITTEE

BASF Corporation Joliet Site
Attn: Keith Hall
25846 SW Frontage Road
Channahon, Illinois 60410

<u>Application No.:</u> 95110120	<u>I.D. No.:</u> 197800AAM
<u>Applicant's Designation:</u>	<u>Date Received:</u> November 30, 1995
<u>Operation of:</u> Polystyrene Plant	
<u>Date Issued:</u> July 27, 2000	<u>Expiration Date</u> ² : July 27, 2005
<u>Source Location:</u> 25846 SW Frontage Road, Channahon, Will County	
<u>Responsible Official:</u> Rick Lee, Director of Operations	

This permit is hereby granted to the above-designated Permittee to OPERATE a polystyrene plant, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

Revision Date Received: June 7, 2004
Revision Date Issued: July 27, 2004
Purpose of Revision: Administrative Amendment

This administrative amendment makes the value in a table consistent with the heading. Because the changes in the permit were only administrative, no formal public notice was issued.

This document only contains those portions of the entire CAAPP permit that have been revised as a result of this permitting action. If a conflict exists between this document and previous versions of the CAAPP Permit, this document supercedes those terms and conditions of the permit for which the conflict exists. The previous permit issued July 27, 2000 is incorporated herein by reference.

Please attach a copy of this amendment and the following revised pages to the front of the most recently issued entire permit.

If you have any questions concerning this permit, please contact Dan Punzak at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:DGP:psj

cc: Illinois EPA, FOS, Region 1
USEPA

¹ This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the Clean Air Act and regulations promulgated thereunder, including 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the permit.

² Except as provided in condition 8.7 of this permit.

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1.0 SOURCE IDENTIFICATION

1.1 Source

BASF Corporation Joliet Site
25846 SW Frontage Road
Channahon, Illinois 60410
815/423-5541

I.D. No.: 197800AAM
Standard Industrial Classification: SIC, 2821

1.2 Owner/Parent Company

BASF Corporation
3000 Continental Drive, North
Mt. Olive, New Jersey 07828

1.3 Operator

BASF Corporation Joliet Site
25846 SW Frontage Road
Channahon, Illinois 60410

Rick Lee, Director of Operations
815/423-5541

Environmental Contact
Keith Hall
815/423-1219

1.4 General Source Description

The BASF Joliet Polystyrene Plant is located at 25846 S.W. Frontage Road in Channahon, Will County. The source manufactures several grades of polystyrene pellets. In addition, BASF operates several boilers and oil heaters to provide steam/heat for the processes.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

ACMA	Alternative Compliance Market Account
Act	Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
ATUs	Allotment Trading Units
BAT	Best Available Technology
Btu	British thermal unit
°C	Degrees Celsius
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	Carbon Monoxide
ERMS	Emission Reduction Marketing System
°F	Degrees Fahrenheit
gal	gallon
GPSS	General Purpose Polystyrene
HAP	Hazardous Air Pollutant
HIPS	High Impact Polystyrene
hr	hour
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
kg	Kilogram
kW	kilowatts
lb	pound
LDAR	Leak Detection and Repair
MACT	Maximum Available Control Technology
Mcf	million cubic feet
Mg	Megagram
mmBtu	Million British thermal units
mo	month
MW	Megawatt
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RMP	Risk Management Plan
SO ₂	Sulfur Dioxide
T	ton

T1	Title I - identifies Title I conditions that have been carried over from an existing construction permit
T1R	Title I Revised - identifies Title I conditions that have been carried over from an existing construction permit and subsequently revised in this permit
T1N	Title I New - identifies Title I conditions that are being established in this permit
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material
yr	year

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

- 3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a) (1) and 201.211, as follows:

F-222, F-355, and F-1222 Emergency Blowdown Drums
F-215 GPPS Blue Dye Additives Tank
D-3222 Emergency Blowdown Tank
F-312 Hot Oil Reprocessing Hold Tank
F-341 Hot Oil Condensate Hold Tank

- 3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a) (2) or (a) (3), as follows:

F-127 Mercaptan Tank^a
Two Diehead Ovens
F-401 A & B and F-402 A & B Peroxide Solution Tanks
F-403 and F-705 Mineral Oil Storage Tanks
M-624 A & B, M-674 A through E, Rotary Feeders with Filters
F-617 HIPS Off-Spec Bin
F-662 GPPS Off-Spec Bin
F-855 Packaging Bin
F-875 Black Carton Filling Bin
F-870 Sample Bin
F-1617 Off-Spec Bin
M-833 Autoload Blendback Hopper Loader
M-1186 Pellet Blend Back System
F-8140, F-8142 Packaging Hoppers

^a This unit is vented to a carbon adsorber but the emissions in the absence of the control equipment are less than 0.44 tons/year.

- 3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a) (4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn

refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.

3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Date Constructed	Emission Control Equipment
F-111	HIPS Rubber Dissolver	1982	None
F-113, F-115	HIPS 1 Additive Tanks	1982	None
M-161 A and B	HIPS 1 Dies	1982	Smog Hog (M-301 and M-303)
M-234 A, B, and C and M-266R, M-276	GPPS Dies	1982, 1988, and 1993	Smog Hog (M-301 and M-303)
F-246 A	GPPS Solvent Separator Knock-Out Pot	1985	Vent Chiller (M-284 A and B)
F-211	GPPS Additive Distribution Tank	1982	None
F-1111	HIPS 2 Rubber Dissolver	1990	None
M-1161A and B	HIPS 2 Dies	1990	Smog Hog (M-1303 A and B)
F-1246	Liquid Ring Separator	1991	Vent Chiller (M-1248 A and B)
F-1248	Recycle Solvent Surge Tank	1991	Vent Chiller (M-1248 A and B)
F-3111	HIPS 3 Rubber Dissolver	1997	None
M-3161 A, B and C	HIPS 3 Dies	1997	Smog Hog (M-1303A and B)
F-3246	Liquid Ring Separator	1997	Vent Chiller (M-3248 A and B)
	Fugitive Emissions		LDAR Program
F-625	HIPS 1 Surge Bin	1982	Dust Collector (M-693A)
F-600 thru F-602	HIPS 1 Blending and Holding Silos (3)	1982	Dust Collector (M-695A)
F-650 thru F-652	GPPS Blending and Holding Silos (3)	1982	Dust Collector (M-695A)
M-691	HIPS 1 Fines Separator	1982	Baghouse (M-693)
F-661	GPPS Surge Bin	1982	Dust Collector (M-694A)
M-692	GPPS Fines Separator	1982	Baghouse (M-694)
F-655 and F-664	GPPS Blending Silos (2)	1990	Dust Collector (M-696X)
F-613 thru F-616	HIPS Hopper Car Loading Bins (4)	1982	Dust Collector (X-615)
M-1620	HIPS Filter Receiver	1990	None
F-656 thru F-659	GPPS Hopper Car Loading Bins (4)	1982	Dust Collector (X-616)
M-689	GPPS Filter Receiver	1993	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
F-605 thru F-612	HIPS 1 Holding Silos (8)	1982	None
F-1600 thru F-1602	HIPS 2 Blending and Holding Silos (3)	1990	Dust Collector (M-1680)
M-1691	HIPS 2 Elutriator	1990	Dust Collector (M-1693)
DR-3163A, B, and C	HIPS 3 Pellet Dryers	1997	None
F-3600 thru F-3602	HIPS 3 Blending and Holding Silos (3)	1997	None
F-3613 thru F-3616	HIPS 3 Hopper Car Loading Bins (4)	1997	None
F-3617	HIPS 3 Off-Spec Bin	1997	None
UB H/C	Hopper Car Unloading	1992	Vacuum Unloading Receiver (F-856)
F-851 thru F-854	Holding, Storage, and Blending Silos (4)	1992	Dust Collector (M-896)
M-898	Elutriator	1992	Dust Collector (M-897)
PB H/C Load	Pellet Blending Hopper Car Loading	1992	PB H/C Filter
F-881	HIPS/GPPS Heelback Off-Spec Bin	1989	Dust Collector (M-895A)
B-302	42.9 mmBtu/hr Gas-Fired Boiler	1972	None
B-303	33.9 mmBtu/hr Gas-Fired Boiler	1983	None
B-301A	11.0 mmBtu Gas-Fired Hot Oil Furnace	1982	None
B-301B	11.0 mmBtu Gas-Fired Hot Oil Furnace	1982	None
B-301C	11.0 mmBtu Gas-Fired Hot Oil Furnace	1988	None
B-301D	11.0 mmBtu Gas-Fired Hot Oil Furnace	1997	None
Emergency Generator	14.8 mmBtu/hr Fuel Oil Fired Emergency Generator	1997	None
S R/C	Styrene Rail Car Unloading	1990	None
F-701	Styrene Storage Tank	1983	Submerged Loading Pipe
F-708	Styrene Storage Tank	1972	Submerged Loading Pipe
F-703	Styrene Storage Tank	1965	Submerged Loading Pipe

Emission Unit	Description	Date Constructed	Emission Control Equipment
F-704	Ethylbenzene Purge Tank	1966	Submerged Loading Pipe
F-125	Recycle Solvent Hold Tank	1982	Submerged Loading Pipe
F-706	Oligomer Tank	Before 1982	None
F-212	GPPS Recycle Solvent Hold Tank	Before 1980	Submerged Loading Pipe
F-707	Ethylbenzene Storage Tank	1965	Submerged Loading Pipe
F-121, F-123	Rubber Solution Feed Tanks (HIPS 1)	1982	Submerged Loading Pipe
F-1123 A, B, and C	Rubber Solution Feed Tanks (HIPS 2)	1990	Submerged Loading Pipe
F-1125	Recycle Solvent Hold Tank (HIPS 2)	1990	Submerged Loading Pipe
F-3123 A, B, and C	Rubber Solution Feed Tanks (HIPS 3)	1997	Submerged Loading Pipe
F-3125	Recycle Solvent Hold Tank (HIPS 3)	1997	Submerged Loading Pipe
Wastewater System	Wastewater System	Pre-1980	None
Cooling Towers	HIPS 1/GPPS Cooling Tower and	1989	None
	HIPS 3 Cooling Tower	1996	

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

This permit is issued based on the source requiring a CAAPP permit as a major source of VOM and HAP emissions.

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:

- a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

Compliance with this requirement is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

- b. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.

5.2.3 Fugitive Particulate Matter Operating Program

- a. This source shall be operated under the provisions of an operating program prepared by the Permittee and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions [35 IAC 212.309(a)].
- b. The operating program shall be amended from time to time by the Permittee so that the operating program is current. Such amendments shall be consistent with the requirements set forth by this Condition and shall be submitted to the Illinois EPA [35 IAC 212.312].

- c. All normal traffic pattern roads and parking facilities located at this source shall be paved or treated with water, oils, or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils, or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program [35 IAC 212.306].

5.2.4 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

5.2.5 Risk Management Plan

Should this stationary source, as defined in 40 CFR Section 68.3, become subject to the Accidental Release Prevention regulations in 40 CFR Part 68, then the owner or operator shall submit [40 CFR 68.215(a)(2)(i) and (ii)]:

- a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or
- b. A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan (RMP), as part of the annual compliance certification required by 40 CFR Part 70 or 71.

5.2.6 The HIPS1/GPPS, HIPS2 and HIPS3 processes at this source meet the applicability provisions for affected sources

under the Group IV Polymers and Resins NESHAP at 40 CFR 63 Subpart JJJ.

5.2.7 Episode Action Plan

- a. The Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.
- b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared.
- c. If a change occurs at the source which requires a revision of the plan (e.g., operational change, change in the source contact person), a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA.
- d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:
 - i. Illinois EPA, Bureau of Air, Compliance Section; and
 - ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control; or
 - iii. For sources located within the city of Chicago: Chicago Department of Environmental Control.

5.3 Non-Applicability of Regulations of Concern

- 5.3.1 This permit is issued based on the source not being subject to 40 CFR 63, Subparts F, G and H (HON-NESHAP), because the source is not classified as a synthetic organic chemical manufacturing industry. However, the source is subject to certain provisions in Subparts F, G and H of 40 CFR Part 63, by reference through 40 CFR 63, Subpart JJJ.
- 5.3.2 This permit is issued based on the equipment at the source not being subject to 40 CFR 60, Subpart DDD as it is superseded by compliance with the NESHAP for Group IV Polymers and Resins at 40 CFR 63, Subpart JJJ.

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

None

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.5.1) are set for the purpose of establishing fees and are not federally enforceable.

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	55.364
Sulfur Dioxide (SO ₂)	2.351
Particulate Matter (PM)	35.544
Nitrogen Oxides (NO _x)	64.259
HAP, not included in VOM or PM	---
Total	157.518

5.5.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

5.5.3 Other Source-Wide Emission Limitations

Source-wide emission limitations are not set for this source pursuant to either the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.6 General Recordkeeping Requirements

5.6.1 Emission Records

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

Total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions) of this permit.

5.6.2 Records for Operating Scenarios

N/A

5.6.3 Retention and Availability of Records

- a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information including HAPs for the previous calendar year.

5.7.3 Annual Reporting of HAP Emissions

The Permittee shall submit an annual report to the Illinois EPA, Compliance Section, on HAP emissions from the source. This report shall be submitted with the Annual Emission Report (Condition 9.7).

5.8 General Operational Flexibility/Anticipated Operating Scenarios

N/A

5.9 General Compliance Procedures

5.9.1 General Procedures for Calculating Emissions

Compliance with the source-wide emission limits specified in Condition 5.5 shall be based on the recordkeeping and reporting requirements of Conditions 5.6 and 5.7, and Compliance Procedures in Section 7 (Unit Specific Conditions) of this permit.

- a. For the purpose of estimating VOM emissions from the tanks, the current version of TANKS 3 or a later revision to the TANKS program is acceptable.
- b. For the purpose of estimating fugitive VOM emissions from leaking components at the source, the emission factors found in "1995 Protocol for Equipment Leak Emission Estimates" published by USEPA in November 1995 by the Emission Standards Division of OAQPS, "EPA-453/R-95-017". Summaries of this lengthy document are also acceptable.
- c. Other VOM and PM emissions shall be calculated using previous testing, material balances and standardized calculations using vapor pressures and known flow rates.
- d. All VOM emissions are classified as HAPs, which are mainly styrene, ethylbenzene, or a combination of the two.
- e. Emissions of VOM and HAPs from wastewater shall be calculated using the WATER 9 program, any updated version of that program, or equivalent.

6.0 EMISSION REDUCTION MARKET SYSTEM (ERMS)

6.1 Description of ERMS

The ERMS is a "cap and trade" market system for major stationary sources located in the Chicago ozone nonattainment area. It is designed to reduce VOM emissions from stationary sources to contribute to further reasonable progress toward attainment, as required by Section 182(c) of the Clean Air Act.

The ERMS addresses VOM emissions during a seasonal allotment period from May 1 through September 30. Participating sources must hold "allotment trading units" (ATUs) for their actual seasonal VOM emissions. Each year participating sources are issued ATUs based on allotments set in the sources' CAAPP permits. These allotments are established from historical VOM emissions or "baseline emissions" lowered to provide the emission reduction from stationary sources required for further progress.

By December 31 of each year, the end of the reconciliation period following the seasonal allotment period, each source shall have sufficient ATUs in its account to cover its actual VOM emissions during the preceding season. An account's balance as of December 31 will include any valid ATU transfer agreements entered into as of December 31 of the given year, provided such agreements are promptly submitted to the Illinois EPA for entry into the account database. The Illinois EPA will then retire ATUs in sources' accounts in amounts equivalent to their seasonal emissions. When a source does not appear to have sufficient ATUs in its account, the Illinois EPA will issue a notice to the source to begin the process for Emissions Excursion Compensation.

In addition to receiving ATUs pursuant to their allotments, participating sources may also obtain ATUs from the market, including ATUs bought from other participating sources and general participants in the ERMS that hold ATUs (35 IAC 205.630) and ATUs issued by the Illinois EPA as a consequence of VOM emission reductions from an Emission Reduction Generator or an Intersector Transaction (35 IAC 205.500 and 205.510). During the reconciliation period, sources may also buy ATUs from a secondary reserve of ATUs managed by the Illinois EPA, the Alternative Compliance Market Account (35 IAC 205.710). Sources may also transfer or sell the ATUs that they holds to other sources or participants (35 IAC 205.630).

6.2 Applicability

This source is considered a "participating source" for purposes of the ERMS, 35 IAC Part 205.

6.3 Obligation to Hold Allotment Trading Units (ATUs)

- a. Pursuant to 35 IAC 205.150(c)(1) and 205.720, and as further addressed by Condition 6.8, as of December 31 of

each year, this source shall hold ATUs in its account in an amount not less than the ATU equivalent of its VOM emissions during the preceding seasonal allotment period (May 1 - September 30) not including VOM emissions from the following, or the source shall be subject to "emissions excursion compensation," as described in Condition 6.4.

- i. VOM emissions from insignificant units and activities as identified in Section 3 of this permit, in accordance with 35 IAC 205.220;
 - ii. Excess VOM emissions associated with startup, shutdown, malfunction or breakdown of an emission unit as authorized elsewhere in this permit, in accordance with 35 IAC 205.225;
 - iii. Excess VOM emissions to the extent allowed by a Variance, Consent Order, or Compliance Schedule, in accordance with 35 IAC 205.320(e) (3);
 - iv. Excess VOM emissions that are a consequence of an emergency as approved by the Illinois EPA, pursuant to 35 IAC 205.750; and
 - v. VOM emissions from certain new and modified emission units as addressed by Section 6.7(b), if applicable, in accordance with 35 IAC 205.320(f).
- b. Notwithstanding the above condition, in accordance with 35 IAC 205.150(c) (2), if a source commences operation of a major modification, pursuant to 35 IAC Part 203, the source shall hold ATUs in an amount not less than 1.3 times its VOM emissions attributable to such major modification during the seasonal allotment period, determined in accordance with the construction permit for such major modification or applicable provisions in Section 7.0 of this permit.

6.4 Market Transaction

- a. The source shall apply to the Illinois EPA for and obtain authorization for a Transaction Account prior to conducting any market transactions, as specified at 35 IAC 205.610(a).
- b. The Permittee shall promptly submit to the Illinois EPA any revisions to the information submitted for its Transaction Account, pursuant to 35 IAC 205.610(b).
- c. The source shall have at least one account officer designated for its Transaction Account, pursuant to 35 IAC 205.620(a).

- d. Any transfer of ATUs to or from the source from another source or general participant must be authorized by a qualified Account Officer designated by the source and approved by the Illinois EPA in accordance with 35 IAC 205.620 and the transfer must be submitted to the Illinois EPA for entry into the Transaction Account database.

6.5 Emission Excursion Compensation

Pursuant to 35 IAC 205.720, if the source fails to hold ATUs in accordance with Condition 6.3, it shall provide emissions excursion compensation in accordance with the following:

- a. Upon receipt of an Excursion Compensation Notice issued by the Illinois EPA, the source shall purchase ATUs from the ACMA in the amount specified by notice, as follows:
 - i. The purchase of ATUs shall be in an amount equivalent to 1.2 times the emissions excursion; or
 - ii. If the source had an emissions excursion for the seasonal allotment period immediately before the period for the present emission excursion, the source shall purchase ATUs in an amount equivalent to 1.5 times the emissions excursion.
- b. If requested in accordance with paragraph (c) below or in the event that the ACMA balance is not adequate to cover the total emissions excursion amount, the Illinois EPA will deduct ATUs equivalent to the specified amount or any remaining portion thereof from the ATUs to be issued to the source for the next seasonal allotment period.
- c. Pursuant to 35 IAC 205.720(c), within 15 days of receipt of an Excursion Compensation Notice, the owner or operator may request that ATUs equivalent to the amount specified be deducted from the source's next seasonal allotment by the Illinois EPA, rather than purchased from the ACMA.

6.6 Quantification of Seasonal VOM Emissions

- a. The methods and procedures specified in Section 5 and 7 of this permit for determining VOM emissions and compliance with VOM emission limitations shall be used for determining seasonal VOM emissions for purposes of the ERMS, with the following exceptions [35 IAC 205.315(b)]:

No exceptions

- b. The Permittee shall report emergency conditions at the source to the Illinois EPA in accordance with 35 IAC 205.750, if the Permittee intends to deduct VOM emissions in excess of the technology-based emission rates normally achieved that are attributable to the emergency from the

source's seasonal VOM emissions for purposes of the ERMS. These reports shall include the information specified by 35 IAC 205.750(a), and shall be submitted in accordance with the following:

- i. An initial emergency condition report within two days of the time when such excess emissions occurred due to the emergency; and
- ii. A final emergency condition report, if needed to supplement the initial report, within 10 days after the conclusion of the emergency.

6.7 Annual Account Reporting

- a. For each year in which the source is operational, the Permittee shall submit, as a component of its Annual Emission Report, seasonal VOM emission information to the Illinois EPA for the seasonal allotment period. This report shall include the following information [35 IAC 205.300]:
 - i. Actual seasonal emissions of VOM from the source;
 - ii. A description of the methods and practices used to determine VOM emissions, as required by this permit, including any supporting documentation and calculations;
 - iii. A detailed description of any monitoring methods that differ from the methods specified in this permit, as provided in Section 205.337 of this Subpart;
 - iv. If a source has experienced an emergency, as provided in 35 IAC 205.750, the report shall reference the associated emergency conditions report that has been approved by the Illinois EPA;
 - v. If a source's baseline emissions have been adjusted due to a variance, consent order or CAAPP permit compliance schedule, as provided for in 35 IAC 205.320(e) (3), the report shall provide documentation quantifying the excess VOM emissions during the season that were allowed by the Variance, Consent Order, or Compliance Schedule, in accordance with 35 IAC 205.320(e) (3); and
 - vi. If a source is operating a new or modified emission unit for which three years of operational data are not yet available, as specified in 35 IAC 205.320(f), the report shall specify seasonal VOM emissions attributable to the new emission unit or the modification of the emission unit.

- b. This report shall be submitted by November 30 of each year, for the preceding seasonal allotment period.

6.8 Allotment of ATUs to the Source

- a.
 - i. The allotment of ATUs to this source is 1,001 ATUs per seasonal allotment period.
 - ii. This allotment of ATUs reflects the Illinois EPA's determination that the source's baseline emissions were 111.3 tons. These emissions include those from the closure of Alumax Mill Products.
 - iii. The source's allotment reflects 88% of the baseline emissions (12% reduction) except for the VOM emissions from specific emission unit excluded from such reduction, pursuant to 35 IAC 205.405 including units complying with MACT or using BAT, as identified in Condition 6.11 of this permit.
 - iv. ATUs will be issued to the source's Transaction Account by the Illinois EPA annually. These ATUs will be valid for the seasonal allotment period during issuance and, if not retired in this season, the next seasonal allotment period.
 - v. Condition 6.3(a) becomes effective beginning in the seasonal allotment period during the initial issuance of ATUs by the Illinois EPA into the Transaction Account for the source.

b. Contingent Allotments for New or Modified Emission Units

N/A

- c. Notwithstanding the above, part or all of the above ATUs will not be issued to the source in circumstances as set forth in 35 IAC Part 205, including:
 - i. Transfer of ATUs by the source to another participant or the ACMA, in accordance with 35 IAC 205.630;
 - ii. Deduction of ATUs as a consequence of emission excursion compensation, in accordance with 35 IAC 205.720; and
 - iii. Transfer of ATUs to the ACMA, as a consequence of shutdown of the source, in accordance with 35 IAC 205.410.

6.9 Recordkeeping for ERMS

The Permittee shall maintain copies of the following documents as its Compliance Master File for purposes of ERMS [35 IAC 205.700(a)]:

- a. Seasonal component of the Annual Emission Report;
- b. Information on actual VOM emissions, as specified in detail in Sections 5 and 7 of this permit and Condition 6.6(a); and
- c. Any transfer agreements for the purchase or sale of ATUs and other documentation associated with the transfer of ATUs.

6.10 Federal Enforceability

Section 6 becomes federally enforceable upon approval of the ERMS by USEPA as part of Illinois' State Implementation Plan.

6.11 Exclusions from Further Reductions

- a. VOM emissions from the following emission units, if satisfying subsection (a)(1), (a)(2), or (a)(3) prior to May 1, 1999, shall be excluded from the VOM emissions reductions requirements specified in IAC 205.400(c) and (e) as long as such emission units continue to satisfy subsection (a)(1), (a)(2), or (a)(3) [35 IAC 205.405(a)]:
 - i. Emission units that comply with any NESHAP or MACT standard promulgated pursuant to the CAA;
 - ii. Direct combustion emission units designed and used for comfort heating purposes, fuel combustion emission units and internal combustion engines; and
 - iii. An emission unit for which a LAER demonstration has been approved by the Agency on or after November 15, 1990.

The source has demonstrated in their ERMS application and the Illinois EPA has determined that the following emission units qualifies for exclusion from further reductions because they meet the criteria as indicated above [35 IAC 205.400(a) and (c)]:

B-302 Erie City Steam Boiler
B-303 Zurn Industrial Steam Boiler
B-301A "A" Hot Oil Furnace
B-301B "B" Hot Oil Furnace
B-301C "C" Hot Oil Furnace
B-301D "D" Hot Oil Furnace
Fugitive Emissions

- b. VOM emissions from the emission units using BAT for controlling VOM emissions, prior to May 1, 1999, shall not be subject to the VOM emissions reductions requirements specified in IAC 205.400(c) or (e) as long as such emission unit continues to use such BAT [35 IAC 205.405(b)].

The source has demonstrated in their ERMS application and the Illinois EPA has determined that the following emission units qualifies for exclusion from further reductions because these emission units use BAT for controlling VOM emissions as indicated above [35 IAC 205.400(b) and (c)]:

Styrene Railcar Unloading Station
F-701 Styrene Storage Tank
F-708 Styrene Storage Tank
F-703 Styrene Storage Tank
F-704 Ethylbenzene Purge Tank
F-125 Recycle Solvent Tank
F-706 Oligomer Tank
F-212 GPPS Recycle Solvent Tank
F-707 Ethylbenzene Storage Tank
F-111 Rubber Dissolver
F-121 Styrene Rubber Solution Feed Tank
F-123 Styrene Rubber Solution Feed Tank
F-113 HIPS Additive Tank
EF-7 Mercaptan Room (carbon adsorption unit)
M-161 A & B HIPS I Dies
F-211 GPPS Additive Tank
M-234 A, B & C; M-266R; M-276 GPPS dies
M-301 and M-303 Smog Hogs
F-246A GPPS Solvent Separator Knock-Out Pot
M-284 A & B Vent Chiller
F-115 HIPS Additive Tank
F-1111 Rubber Dissolver
F-1123 A, B & C Rubber Solution Feed Tanks
M-1161 A & B HIPS2 Dies
M-1303 A & B, Smog Hog
F-1246 Liquid Ring Separator
M-1248 AX & B HIPS2 Vent Chiller
F-1125 HIPS2 Recycle Solvent Hold Tank
F-3125 Recycle Solvent Tank
F-3111 Rubber Dissolver
F-3123 A, B & C Rubber Solution Feed Tanks
M-3161 A, B & C Dies
F-3246 Vent Knock-Out Pot
M-3248 A & B Vent Chillers
Emergency Generator
Cooling Towers
Wastewater Treatment Plant

7.0 UNIT SPECIFIC CONDITIONS

7.1 Unit: HIPS/GPPS VOM Emitting Processes
Control: See Condition 7.2.2

7.1.1 Description

Polystyrene is a polymer of styrene so that in the reactors there is a cross-linking between styrene molecules but not a reaction between two different materials. Small amounts of ethylbenzene are added and a product called HIPS also includes rubber compounds that cross link with the styrene. The product from the reactors go to "dies" to be pelletized and the dies are vented to a smog-hog, which removes PM. The reactors are not listed as emission units because they (all HIPS and GPPS reactors) vent to separator knock-out pots which vent to a vent chiller, essentially a very low temperature condenser. The flow rate is very low. Liquids from the knock-out pot and condenser are recycled.

Either HIPS or GPPS can be produced in the HIPS 1/GPPS, HIPS 2 or HIPS 3 process trains. The name of the equipment only reflect historical identification and do not limit the type of process that may be conducted in that equipment.

7.1.2 List of Emission Units and Pollution Control Equipment

Emission Equipment Number	Unit Process ^a	Description	Emission Control Equipment
S R/C		Railcar Unloading and Various Storage Tanks (See Attachment 1)	Most Have Submerged Loading
F-111	HIPS 1	Rubber Dissolver	None
F-113, F-115	HIPS 1	HIPS Additive Tanks	None
M-161 A & B	HIPS 1	HIPS 1 Dies	Smog Hog ^b (M-301 and M-303)
M-234 A, B, & C; M-266R, M-276	GPPS	GPPS Dies	Smog Hog ^b (M-301 and M-303)
F-246 A	GPPS	GPPS Solvent Separator Knock-Out Pot	Vent Chiller (M-284 A & B)
F-211	GPPS	GPPS Additive Distribution Tank	None
F-125	GPPS	Recycle Solvent Hold Tank	Submerged Loading Pipe
F-212	GPPS	Recycle Solvent Hold Tank	Submerged Loading Pipe

Emission Equipment Number	Unit Process ^a	Description	Emission Control Equipment
F-121, F-123	HIPS 1	Rubber Solution Feed Tanks	Submerged Loading Pipe
F-1111	HIPS 2	Rubber Dissolver	None
M-1161A & B	HIPS 2	HIPS 2 Dies	Smog Hog ^b (M-1303 A & B)
F-1246	HIPS 2	Liquid Ring Separator	Vent Chiller (M-1248 A X & B)
F-1248	HIPS 2	Recycle Solvent Surge Tank	Vent Chiller (M-1248 A X & B)
F-1123 A, B, and C	HIPS 2	Rubber Solution Feed Tank	Submerged Loading Pipe
F-1125	HIPS 2	Rubber Solution Feed Tank	Submerged Loading Pipe
F-3123 A, B, and C	HIPS 3	Rubber Solution Feed Tank	Submerged Loading Pipe
F-3125	HIPS 3	Rubber Solution Feed Tank	Submerged Loading Pipe
F-3111	HIPS 3	Rubber Dissolver	None
M-3161 A, B & C	HIPS 3	HIPS 3 Dies	Smog Hog ^b (M-1303 A & B)
F-3246	HIPS 3	Liquid Ring Separator	Vent Chiller (M-3248 A & B)
		Fugitive Emissions	LDAR Program

^a HIPS is high impact polystyrene. Specific line number also identified. GPPS is general purpose polystyrene.

^b Two units but only one runs at any time. Alternate operations. Electrostatic precipitators for PM.

7.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected polystyrene process unit" for the purpose of these unit-specific conditions is a process line that includes any of the various pieces of equipment listed in Condition 7.1.2.
- b. The HIPS 1/GPPS and HIPS 2 and 3 processes, which includes the equipment in Condition 7.1.2 are subject to the Group IV Polymers and Resins NESHAP, 40 CFR 63, Subpart JJJ.

This standard requires that the daily average outlet gas stream temperature from each final condenser (i.e., vent chillers) in the material recovery section not exceed - 13°F (- 25°C). Pursuant to 40 CFR 63.1316(c) (1) (ii) temperature exceedances shall not be considered a violation when such exceedances occur during periods of startup, shutdown, or

malfunction. (40 CFR 63.1310(j)(i), or where there has been no parameter monitoring excursions, as defined in 40 CFR 63.1334(f).)

- c. i. For the equipment leaks program, 40 CFR 63 Subpart JJJ incorporates the equipment leaks requirements of 40 CFR 63 Subpart H with the differences specified at 40 CFR 63.1331(a). These include the following standards:
 - 63.162 General Standards
 - 63.163 Standards for Pumps in Light Liquid Service
 - 63.164 Standards for Compressors
 - 63.165 Standards for Pressure Relief Devices in Gas/Vapor Service
 - 63.166 Standards for Sampling Connections
 - 63.167 Standards for Open-Ended Valves or Lines
 - 63.168 Standards for Valves in Gas/Vapor and Light Liquid Service
 - 63.169 Standards for Pumps, Valves, Connectors and Agitators in Heavy Liquid Service; Instrumentation System; and Pressure Relief Devices in Liquid Service
 - 63.170 Standards for Surge Control Vessels and Bottom Receivers
 - 63.171 Standards for Delay of Repair
 - 63.172 Standards for Closed-Vent Systems and Control Devices
 - 63.173 Standards for Agitators in Gas/Vapor Service and in Light Liquid Service
 - 63.174 Standards for Connectors Gas/Vapor Service and in Light Liquid Service
 - ii. The Permittee shall also comply with the equipment leak provisions of 35 IAC Part 218, Subpart Q. To the extent that they are duplicative, compliance with a more stringent standard (i.e. NESHAP) shall be deemed compliance with both standards.
- d. All of the material recovery sections of each affected polystyrene line are subject to 35 IAC 218.642 which states that no person shall cause or allow the emissions of VOM from the material recovery section (i.e., vent chillers) to exceed 0.12 kg VOM per 1,000 kg of polystyrene produced (0.12 lb/1,000 lb or 0.24 lb/ton). Compliance with Condition 7.1.3(b) assures compliance with this limit.

- e. Each affected emission unit listed in Condition 7.1.2 is subject to 35 IAC 218.301 which limits organic material emissions to 8 lb/hr if the material is photochemically reactive. Pursuant to the definition in 35 IAC 211.4690, the organic materials involved in this process are photochemically reactive. The control efficiency of the vent chillers is greater than 85%. The smog-hog is considered to be a PM control device only and not a device for reducing organic material emissions.
- f. All of the polystyrene process units (HIPS 1/GPPS, HIPS 2, and HIPS 3), including the emission units listed in Condition 7.1.2, are subject to 35 IAC 218, Subpart RR, Miscellaneous Organic Chemical Manufacturing Process because the units not regulated by 35 IAC 218 Subpart BB have a potential to emit (PTE) greater than 25 tons/year. However, because those units are within the category specified by 35 IAC Subpart BB, the control requirements of 35 IAC 218.966 do not apply pursuant to 35 IAC 218.960 (b) (2) .
- g. All of the polystyrene process units (HIPS 1/GPPS, HIPS 2, and HIPS 3), including the emission units listed in Condition 7.1.2, are subject to 35 IAC 218, Subpart TT, Other Emission Units, because the units not regulated by 35 IAC 218 Subpart BB have a PTE greater than 25 tons/year. However, because those units, with the exception of styrene railcar unloading (S R/C) are within the category specified by 35 IAC 218 Subpart BB, the control requirements of 35 IAC 218.986 do not apply pursuant to 35 IAC 218.980 (b) (2) . The Permittee has accepted a limit of unloading 1,000 railcars of styrene per year, which limits VOM emissions to under 2.5 tons per calendar year, thus qualifying for the exemption from control in 35 IAC 218.980 (d) .
- h. While each emission unit in Condition 7.1.2 is subject to 35 IAC 212.321, only the dies emit any PM. This rule states: No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceed the allowable emission rates specified by using the equation:

$$E = A (P)^B$$

Where:

P = Process weight rate; and
E = Allowable emission rate; and

i. Up to process weight rate of 408 Mg/hr (450 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	1.214	2.54
B	0.534	0.534

i. Malfunction and Breakdown

i. Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written Startup, Shutdown and Malfunction (SSM) Plan for the equipment subject to the 40 CFR 63 Subpart JJJ as described in Condition 7.1.3(c) [40 CFR 63.6(e) (3)].

The SSM Plan at the site and any revision to that plan is incorporated by reference and is enforceable as a term and condition of this permit.

Revisions to the SSM Plan are automatically incorporated by reference and do not require a permit revision.

ii. In the event of a malfunction or breakdown of a vent chiller (M-284 A & B, M-1248 AX & B, M-3248 A & B), or equipment that vents to a vent chiller the Permittee is authorized to continue operation of the polystyrene reactors in violation of the applicable requirement of 35 IAC 218.301 and 218.642, as necessary to prevent risk of injury to personnel or severe damage to equipment. This authorization is subject to the following requirements:

A. The Permittee shall repair the damaged feature(s) of the vent chillers or begin an orderly shutdown of the reactors if the vent chillers cannot be repaired within 48 hours or the Permittee obtains an extension for up to three additional days, from the Illinois EPA. The request for such an extension must document that repair parts are unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will

be repaired or the reactors shutdown as soon as possible.

- B. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.1.9(b) and 7.1.10(a) and (e).
 - iii. Styrene storage tanks (F-701 and 708) may continue to operate (i.e. have styrene pumped into them) during malfunction or breakdown of the tank refrigeration system as the tanks remain in compliance with Condition 7.1.3(e).
 - iv. In the event of a malfunction or breakdown of a smog hog (M-301, M303, and M1303A and B), the Permittee is authorized to continue operation of the dies vented to the smog hogs because the equipment has been tested with the smog hogs not operating and the emissions are in compliance with the applicable rule (see Condition 7.1.3(h)). Extended operation beyond 15 days without the smog hogs, even if in compliance with the applicable rule, is not allowed without a revision to the permit.
- j. Startup/Shutdown Provisions

The Permittee is authorized to operate an affected polystyrene process unit in violation of the applicable limit of 35 IAC 218.301 and 218.642 during startup or shutdown pursuant to 35 IAC 201.262, as the Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual starts, and frequency of startups. This authorization is subject to the following:

- i. This authorization only extends for a period of up to 12-hours following the startup event.
- ii. The Permittee shall minimize startup/shutdown emissions, the duration of startups/shutdowns, and minimize the frequency of startups/shutdowns.
- iii. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.1.9(a).

7.1.4 Non-Applicability of Regulations of Concern

- a. None of the tanks listed in Attachment 1 are subject to the NSPS, 40 CFR 60 Subpart K, Ka or Kb because

the vapor pressure of the material stored is too low to meet the applicability requirements of the NSPS. Although not subject to an NSPS, some tanks do require recordkeeping pursuant to the NSPS, see Condition 7.1.9.

- b. The storage tanks in Attachment 1 are not subject to 35 IAC 218.120 because the applicability requirements in Section 218.119 exempt tanks due to either or both vapor pressure and tank volume. The tanks are exempt from 35 IAC 218.122(b) due to the vapor pressure exemption in Section 218.122(c).
- c. Some specific provisions of the NESHAP do not apply as specified as follows:
 - i. The cooling tower provisions at 40 CFR 63.1329 do not apply since the source does not produce polyethylene terphthalate.
 - ii. The wastewater provisions of 40 CFR 63.1330 do not apply since the source produces polystyrene using a continuous process.
 - iii. The HIPS1, GPPS, HIPS2 and HIPS3 dies (Emission Equipment Numbers M-161A and B, M-234A, B and C, M-266R, M-276, M-1161A and B and M-3161A, B and C in Condition 7.1.2) are finishing processes and therefore are not part of the "affected source" regulated by the NESHAP Subpart JJJ, pursuant to 40 CFR 63.1310(d)(4).
 - iv. The rubber dissolvers, rubber solution tanks, recycle solvent tanks, GPPS additive tank and HIPS additive tanks (Emission Equipment Numbers F-111, F-113, F-115, F-211, F-125, F-121, F-123, F-212, F-1111, F-1123A, F-1123B, F-1123C, F-1125, F-1248, F-3123A, F-3123B, F-3123C, F-3125 and F-3111) are surge control vessels and therefore are not storage vessels or other units controlled by the NESHAP Subpart JJJ pursuant to 40 CFR 63.1312(b) and 63.161.
 - v. The styrene storage tanks (listed in Attachment 1) are part of an existing affected source (HIPS1/GPPS and HIPS2). The NESHAP, Subpart JJJ, does not apply to the styrene storage tanks, pursuant to 40 CFR 63.1314(d).
 - vi. The ethylbenzene storage tank, ethylbenzene purge tank and oligmer tank are Group 2 storage vessels pursuant to the NESHAP

definition. Therefore, the control provisions of the NESHAP, Subpart JJJ, do not apply to these tanks, pursuant to 40 CFR 63.119(a)(3).

vii. The solvent separator knock-out pots and liquid ring separators only emit during startup. Therefore, the control provisions of the NESHAP, Subpart JJJ, do not apply to these units, pursuant to 40 CFR 63.1310(j)(1). Nevertheless, these units are part of the continuous process vents in each affected source and are controlled by vent chillers.

d. This permit is issued based on the affected polystyrene process units not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected polystyrene process units are subject to a NESHAP proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).

7.1.5 Control Requirements or Operational and Production Limits and Work Practices

- a. The vent chillers on the material recovery sections shall be operated to meet the temperature requirements in Condition 7.1.3(b).
- b. The carbon adsorber on the mercaptan solution tank (F-127) is for odor purposes only and not required to demonstrate compliance with applicable rules listed in Condition 7.1.3(e); therefore the carbon adsorber (once through type, not regenerated) may be replaced as felt necessary by the Permittee.
- c. The styrene day tank (F-703) shall be operated at a constant level so that there are no emissions due to elevation changes from emptying and filling of the tank. Constant level is defined as a variation of less than 2 inches. This provision does not apply during maintenance and repair activities, or when conditions of the Des Plaines River impede the sources ability to receive styrene via barge.
- d.
 - i. Production of polystyrene product from all lines combined shall not exceed 898 million pounds per year [T1].
 - ii. Compliance with annual production limits shall be determined from a running total of twelve months of data.
- e. The number of railcars of styrene unloaded shall not exceed 1,000 per calendar year.

7.1.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected polystyrene manufacturing equipment is subject to the following:

- a. Emissions from specific affected units shall not exceed the following limits [T1]. Attachment 3 provides a listing of equipment for each equipment group.

<u>Equipment Group</u>	<u>VOM Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
A/B/C Furnaces	0.2	1.61
Styrene Tanks	1.2	11.82
Miscellaneous Tanks	0.1	0.90
GPPS Production Units	0.1	0.54
HIPS Production Units	2.1	21.84
Cooling Towers	0.1	<u>1.00</u>
	Total:	37.69

- b. Compliance with the annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- c. The source has addressed the applicability and compliance of 35 IAC Part 203, Major Stationary Sources Construction and Modification (See Attachment 1). These limits continue to ensure that the construction and/or modification addressed in this construction permit does not constitute a new major source or major modification pursuant to these rules.

7.1.7 Testing Requirements

- a. Within 60 days of a written request by the Illinois EPA, the Permittee shall conduct a demonstration to determine compliance with the temperature limits for the vent chillers as described in Condition 7.1.3(b) employing the test protocol described in 40 CFR 63.1318 and 63.116.
- b. LDAR testing (monitoring) shall comply with Method 21 of 40 CFR 60, Appendix A, as specified in 40 CFR 63.180(b) and also specified in 35 IAC 218.421.

7.1.8 Monitoring Requirements

- a. A temperature-monitoring device shall be installed at the condenser exit (product side). The temperature-monitoring device shall be equipped with a continuous recorder that measures data at least

once every 15 minutes. [40 CFR 63.114(b) (2) and 63.1315(a)] The source shall record each measured data value or block average values for one hour calculated from all measured data values in that period [40 CFR 63.1315(d)].

- b. The heat exchanger monitoring requirements have been placed in Section 7.6.8 of the permit since those requirements are related to the cooling towers.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected polystyrene process unit to demonstrate compliance with Conditions 5.5.1, 7.1.3 and 7.1.6, pursuant to 40 CFR 63.1319 and 63.1335 and Section 39.5(7) (b) of the Act:

a. Records for Startup and Shutdown

The Permittee shall maintain the following records, pursuant to Section 39.5(7) (b) of the Act, for each affected polystyrene process unit subject to Condition 7.1.3(d) and (e), which at a minimum shall include:

- i. The following information for each startup or shutdown of an affected polystyrene process unit:
 - A. Date and duration of the startup or shutdown, i.e., start time and time normal operation achieved, i.e., vent chillers are at proper temperature;
 - B. If normal operation was not achieved within twelve hours or shutdown completed, an explanation why startup could not be achieved in twelve hours;
 - C. A detailed description of the startup or shutdown, including reason for operation and whether procedures in the startup plan were followed;
 - D. An explanation of why established startup or shutdown procedures could not be performed, if not performed;
- b. Records for Malfunctions or Breakdowns of Vent Chillers

- i. The Permittee shall maintain records for malfunction and breakdown as required by 40 CFR 63.10(b), 63.1335(b)(1)(i) and 63.1335(d)(7):
- ii. The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected polystyrene process unit subject to 35 IAC 218.301 and 218.642 during malfunctions or breakdown of the control features of the polystyrene process unit, which as a minimum, shall include:
 - iii. Date and duration of malfunction or breakdown;
 - iv. A detailed explanation of the malfunction or breakdown;
 - v. An explanation why the damaged feature(s) could not be immediately repaired within 48 hours or the reactors removed from service without risk of injury to personnel or severe damage to equipment;
 - vi. The measures used to reduce the quantity of emissions and the duration of the event;
 - vii. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and
 - viii. The amount of release above typical emissions during malfunction/breakdown.
- c. Records for Malfunctions and Breakdowns of Smog Hogs

The records normally required by 35 IAC 201.263 are not required because the dies are not out of compliance, but the date the malfunction or breakdown began must be recorded and if not repaired within 15 days shall be reported to the Illinois EPA (see reporting requirement in Condition 7.1.10).
- d. Daily hour average exit temperature from each vent chiller for each operating day [40 CFR 63.1319(a) and 63.1335(d)(3) and 63.118(b)(2)]. However, if all recorded values of temperature during an operating day are at -25°C or below, the facility may record that all values were at or below -25°C rather than calculating and recording a daily average for that operating day [40 CFR 63.1335(d)(6)]. In addition, monitoring data recorded during startups, shutdowns, malfunctions, monitoring system breakdowns, monitoring system calibration checks, monitoring

system zero, monitoring system high-level adjustments, and periods of non-operation of the process equipment or recovery equipment resulting in cessation of emissions being monitored, shall not be included in any daily average for temperature monitoring. Records must be kept of time and duration of all such periods and any other periods where process or recovery equipment are operating when the monitoring system is not operating [40 CFR 63.1335(d) (7)].

- e. Recordkeeping for equipment leaks shall meet the requirements of 40 CFR 63.181 and 35 IAC 218.425.
- f. Number of railcars of styrene unloaded per month.
- g. Logs detailing periods when F-703 is loaded without maintaining a constant level within the tank.
- h. VOM emissions (tons/month and tons/year) and supporting calculations for periods when F-703 is loaded without maintaining a constant level within the tank.
- i. Heat exchanger leak records required by 40 CFR 63.104(f):
 - i. Monitoring data required by 40 CFR 63.104 indicating a leak and the date when the leak was detected, and if demonstrated not to be a leak, the basis for that determination;
 - ii. Records for any leaks detected by procedures subject to 40 CFR 63.104(c) (2) and the date the leak was discovered;
 - iii. The dates of efforts to repair leaks; and
 - iv. The method or procedure used to confirm repair of a leak and the date the repair was confirmed.
- j. Polystyrene production (lb/mo).
- k. Records of the dimension of the storage tank and an analysis showing the capacity of the tank for tanks F-212, F-701, F-703, F-704, F-706, F-707, F-708, F-3123 A-C, and F-3125.
- l. VOM emission calculations to verify compliance with various limits in Condition 7.1.6 (ton/yr).
- m. Total VOM and HAP emissions (lb/mo).

7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected polystyrene process units with the permit requirements as follows, pursuant to Section 39.5(7) (f) (ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Reporting of noncompliance or deviations with respect to the MACT provisions of Condition 7.1.3(b) and 7.1.3(c) (i) shall be done according to the requirements of 40 CFR 63, Subpart JJJ and Condition 7.1.10(e).
- b. VOM emissions exceeding the limits in Condition 7.1.6.
- c. Production exceeding the limit in Condition 7.1.5(d).
- d. The Illinois EPA must be notified in writing if the Permittee chooses to comply with 40 CFR 63 Subpart JJJ by a provision other than temperature of the material recovery condenser as specified in Condition 7.1.3(b).
- e.
 - i. Semi-annual report for startup, shutdown, and malfunction, as required by 40 CFR 63.1335(b) (1) (ii).
 - ii. Periodic reports as required by 40 CFR 63.10 (d) (5) (i) and 63.1335(e) (6).
 - iii. Immediate startup, shutdown and malfunction reports as required by 40 CFR 63.10(d) (5) (ii).
- f. For the smog hogs a report shall be submitted to the Illinois EPA only if they have not been repaired within 15 days.
- g. The semi-annual reporting for the equipment leak provisions of 40 CFR 63.1335(e) (6) will suffice for the reporting provisions of 35 IAC Part 218, Subpart Q.
- h. If the source utilizes the delay of repair provision for heat exchanger leaks at 40 CRR 63.104(e), the source shall submit the information required by 40 CFR 63.104(f) (2) in the semi-annual report (see Condition 7.1.10(e) (i) above).

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the polystyrene lines without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

HIPS or GPPS grade material may be manufactured in any of the process lines called HIPS since the emission rate for each process is less than or equal to the other.

7.1.12 Compliance Procedures

See Condition 5.9.1 for emission calculation procedures.

7.2 Unit: Solid Material Handling Processes
Control: Various Dust Collectors or Filters

7.2.1 Description

These processes involve storage or movement of polystyrene that is directly connected to the manufacturing process. After the "Dies" in Section 7.1, the product is a solid material and moved by air conveyors. Fines may form and become a dust. Dust collectors remove these fines except that in the HIPS 3 unit a dense phase conveying system is employed which reduces formation of fines and no control equipment is necessary to comply. Notwithstanding the identification of each piece of equipment with either a HIPS or GPPS process, the equipment may be used for HIPS or GPPS processes. The names of the equipment only reflect historical identification and do not limit the type of process that may be conducted in that equipment.

These processes do not emit VOM.

7.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
F-625	HIPS 1 Surge Bin	Dust Collector (M-693A)
F-600 thru F-602	HIPS 1 Blending and Holding Silos (3)	Dust Collector (M-695A)
F-650 thru F-652	GPPS Blending and Holding Silos (3)	Dust Collector (M-695A)
F-653 and F-654	Feed Silos	None
M-691	HIPS 1 Fines Separator	Baghouse (M-693)
F-661	GPPS Surge Bin	Dust Collector (M-694A)
M-692	GPPS Fines Separator	Baghouse (M-694)
F-655 and F-664	GPPS Blending Silos	Dust Collector (M-696X)
F-613 thru F-616	HIPS Hopper Car Loading Bins (4)	Dust Collector (X-615)
M-1620	HIPS Filter Receiver	None
F-656 thru F-659	GPPS Hopper Car Loading Bins (4)	Dust Collector (X-616)
M-689	GPPS Filter Receiver	None
F-605 thru F-612	HIPS 1 Holding Silos (8)	None
F-1600 thru F-1602	HIPS 2 Blending and Holding Silos (3)	Dust Collector (M-1680)
M-1691	HIPS 2 Elutriator	Dust Collector (M-1693)
DR-3163A, B and C	HIPS 3 Pellet Dryers	None

Emission Unit	Description	Emission Control Equipment
F-3600 thru F-3602	HIPS 3 Blending and Holding Silos (3)	None
F-3613 thru F-3616	HIPS 3 Hopper Car Loading Bins (4)	None
F-3617	HIPS 3 Off-Spec Bin	None

7.2.3 Applicability Provisions and Applicable Regulations

- a. An "affected material handling unit" for the purpose of these unit-specific conditions is a unit handling, blending, or storing polystyrene pellets.
- b. Each affected material handling or storage unit is identified in Condition 7.2.2 and subject to the emission limits identified in Condition 5.2.2.
- c. Each affected material handling unit is subject to 35 IAC 212.321(a) which states that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceed the allowable emission rates specified by using the equation:

$$E = A(P)^B$$

Where:

P = Process weight rate (tons/hr);
E = Allowable emission rates (lbs/hr);
A = 2.54; and
B = 0.534

- d. Malfunction and Breakdown

The equipment vented to the following baghouses/dust collectors may continue to operate during malfunction or breakdown of the associated baghouse/dust collector as the PM emissions without the control device continue to remain in compliance with Condition 7.2.3(c).

M-693 HIPS I Fines Separator Dust Collector
M-693A HIPS I Surge Bin Dust Collector
M-694 GPPS Fines Separator Dust Collector
M-694A GPPS Dust Collector
M-695A HIPS 1/GPPS Dust Collector
M-696X LRCP Dust Collector
X-615 HIPS Hopper Car Loading Bin Dust Collector

X-616 GPPS Hopper Car Loading Bin Dust Collector
M-1680 Silo Dust Collectors
M-1693 Elutriator Dust Collector

7.2.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected material handling units not being subject to the NESHAP for Group IV Polymers and Resins (40 CFR 63, Subpart JJJ) because those requirements are only for equipment which emit HAPs and not for equipment that only emit PM.
- b. This permit is issued based on the affected material handling units not being subject to 35 IAC Part 218 because Part 218 only applies to VOM emission units and these units only emit PM.
- c. This permit is issued based on the affected solid material handling processes not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Source, because the affected solid material handling processes do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

7.2.5 Control Requirements or Operational and Production Limits and Work Practices

The dust collector or filters shall be operated in accordance with the vendors recommended practices so as to reduce emissions to meet the limits in Condition 5.2.2 and 7.2.6.

7.2.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected material handling processes are subject to the following:

- a. Emissions of PM from each dust collector baghouse or uncontrolled unit listed in Condition 7.2.2, except for F-653 and F-654 which are listed in Condition 7.2.6(b), shall not exceed 0.44 ton/yr [T1R]. These limits are more stringent than allowed by Condition 7.2.3(c) but are more than allowed by some previous construction permits, e.g. permit 89040046 and 04010026. These past limits may vary, e.g. 0.10, 0.22 and 0.44 tons/yr and the Permittee would prefer a generic limit of 0.44 ton/yr for each unit. Compliance with 40 CFR 52.21 Prevention of Significant Deterioration (PSD) is not an issue at the low rate indicated. These limits continue to

ensure that the construction and/or modification addressed in this construction permit does not constitute a new major source or major modification pursuant to these rules. These limits supersede the limitations established in various construction permits and the information in the CAAPP application contains the most current and accurate information for the source. These units would be classified as insignificant if they were not process units and with control equipment.

- b. Emissions from the affected feed silos F-653 and F-654 combined shall not exceed the following limits:

Particulate Matter Emissions	
<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
1.0	10

These limits are based on the maximum rate.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total). [T1]

The above limitations were established in Permit 02020088, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. [T1]

7.2.7 Testing Requirements

None

7.2.8 Monitoring Requirements

None

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected material handling unit to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

- a. Material throughput (ton/mo).

- b. Dust collector filter replacements.
- c. PM emissions (lb/mo).
- d. Records are not required to demonstrate compliance with Condition 7.2.3(c) since compliance is assured by the inherent nature of the operation. Although the units are in compliance during malfunction or breakdown of the dust collector, records of the time periods of the malfunctions or breakdowns must be kept.

7.2.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of an affected material handling process with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Non-compliance with Condition 5.5.1.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.2.12 Compliance Procedures

Operation with a good filter is assumed to achieve compliance with the applicable rule.

7.3 Unit: Material Handling Processes
Control: Various Dust Collectors

7.3.1 Description

This section includes equipment that is not a direct part of the polystyrene manufacturing process. For instance it includes equipment involved in pellet blending, and hopper car washing. In the pellet blending unit various grades of polystyrene not manufactured at this site may be received in hopper cars, unloaded and stored in silos to be blended with product that is manufactured at this site. The blended product is then shipped out in hopper cars. Air conveyors move the material and dust collectors or filters remove fines before the conveying air is discharged to the atmosphere. PM is considered to be the only contaminant emitted; any VOM is considered negligible.

Off-site bins are where fines from hoppers are air conveyed prior to washing the hopper cars.

The terms filter, dust collector and baghouse are almost synonymous but there are slight distinctions.

7.3.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Pellet Blending Unit		
PB H/C	Hopper Car Unloading	Vacuum Unloading Receiver (F-856)
F-851 thru F-854	Holding, Storage and Blending Silos (4)	Dust Collector (M-896)
M-898	Elutriator	Dust Collector (M-897)
PB H/C Load	Pellet Blending Hopper Car Loading	PB H/C Filter
Hopper Car Wash		
F-881	HIPS/GPPS Heelback Off-Spec Bin	Dust Collector (M-895A)

7.3.3 Applicability Provisions and Applicable Regulations

- a. An "affected material handling unit" for the purpose of these unit specific conditions is a unit in which solid polystyrene material is being handled, blended, or stored and listed in Condition 7.3.2. The only emissions are PM.
- b. Each process listed in Condition 7.3.2 is subject to 35 IAC 212.321 which states that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any

new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceed the allowable emission rates specified by using the equation:

$$E = A (P)^B$$

Where:

P = Process weight rate (tons/hr);
E = Allowable emission rates (lbs/hr);
A = 2.54; and
B = 0.534

- c. Malfunction and breakdown: Equipment vented to various dust collectors may continue to operate during malfunction or breakdown of the dust collectors as the collectors are not necessary to comply with Condition 7.3.3(b). The dust collectors are installed to minimize emissions and not for compliance.

7.3.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected material handling units not being subject to the NESHAP for Group IV Polymers and Resins (40 CFR 63, Subpart JJJ) because those requirements are only for equipment which emit HAPs and not for equipment that only emit PM.
- b. These processes are not subject to NSPS for Polymer Manufacturing (40 CFR 60 Subpart DDD) because those rules are only for emissions of VOM or HAPs from equipment in which polystyrene is manufactured and not for handling of the final product which generate PM.
- c. This permit is issued based on the affected material handling processes not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Source, because the affected material handling processes do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

7.3.5 Control Requirements or Operational and Production Limits and Work Practices

The dust collector shall be operated to minimize visible emissions but the processes are in compliance with Condition 7.3.3 without the dust collectors.

7.3.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected material handling processes are subject to the following:

Emissions of PM from each dust collector or filter listed in Condition 7.3.2 shall not exceed 0.44 ton/yr [T1R]. These limits are more stringent than allowed by Condition 7.3.3(b) but are more than allowed by some previous construction permits, e.g. permit 89040046. These past limits may vary, e.g. 0.10, 0.22 and 0.44 tons/yr and the Permittee would prefer a generic limit of 0.44 ton/yr for each unit. Compliance with 40 CFR 52.21 Prevention of Significant Deterioration (PSD) is not an issue at the low rate indicated. These limits continue to ensure that the construction and/or modification addressed in this construction permit does not constitute a new major source or major modification pursuant to these rules. These limits supersede the limitations established in various construction permits and the information in the CAAPP application contains the most current and accurate information for the source. These units would be classified as insignificant if they were not process units and with control equipment.

7.3.7 Operating Requirements

The dust collectors shall be operated in accordance with manufacturer's recommended practices and filters/bags replaced as needed.

7.3.8 Inspection Requirements

None

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected material handling processes to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

a. Material throughput (ton/mo);

- b. Dust collector filter replacements;
- c. PM emissions (lb/mo); and
- d. Records are not required to demonstrate compliance with Condition 7.3.3(b) since compliance is assured by the inherent nature of the operation.

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of an affected material handling processes with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Non-compliance with Condition 5.5.1.

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to products without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Various grades or specifications of material stored or transferred may be changed provided it is polystyrene or a material used in making a polystyrene product.

7.3.12 Compliance Procedures

Operation with a good filter is assumed to achieve compliance with applicable rules.

7.4 Unit 01: Gas Fired Fuel Combustion Equipment and Emergency Generator

7.4.1 Description

The boilers combust natural gas to produce steam for process heat.

The hot oil furnaces heat a material other than water but the rules for fuel combustion equipment apply because it is indirect heat transfer.

The Emergency Generator is not classified as a fuel combustion unit.

7.4.2 List of emission equipment and pollution control equipment

Plant Emission Unit	Description	Emission Control
B-302	42.9 mmBtu/hr Gas-Fired Boiler	None
B-303	33.9 mmBtu/hr Gas-Fired Boiler	None
B-301A	11.0 mmBtu/hr Gas-Fired Hot Oil Furnace	None
B-301B	11.0 mmBtu/hr Gas-Fired Hot Oil Furnace	None
B-301C	11.0 mmBtu/hr Gas-Fired Hot Oil Furnace	None
B-301D	11.0 mmBtu/hr Gas-Fired Hot Oil Furnace	None
Emergency Generator	14.8 mmBtu/hr Fuel Oil Fired Emergency Generator	None

7.4.3 Applicable Regulations

- a. An "affected boiler or hot oil furnace" for the purpose of these unit-specific conditions, is each piece of equipment listed in condition 7.4.2.
- b. Emissions of carbon monoxide (CO) into the atmosphere from any fuel combustion emission unit with actual heat input greater than 2.9 MW (10 mmBtu/hr) shall not exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].
- c. Hot oil furnace B-301D is subject to the New Source Performance Standard (NSPS) for small industrial steam generating units, 40 CFR 60, Subpart Dc. Since it is only gas-fired the only standard it is subject to is recordkeeping to verifying that no fuel oil was combusted in the unit.

- d. An "affected emergency generator" for the purpose of these unit-specific conditions is a generator listed in Condition 7.4.2 and used to generate electricity during power outages.
- e. Emissions of sulfur dioxide (SO₂) into the atmosphere from the emergency generator shall not exceed 2000 ppm.

7.4.4 Non-Applicability of Regulations of Concern

- a. Pursuant to 35 IAC 218.303, fuel combustion emission units are not subject to 35 IAC 218.301, "Use of Organic Material".
- b. The emergency generator is not subject to 35 IAC 216.121 since it is not a fuel combustion unit.
- c. This permit is issued based on the affected fuel combustion units and emergency generator not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected fuel combustion units and emergency generator do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.4.5 Operational and Production Limits and Work Practices

- a. Natural gas shall be the only fuel burned in the boilers or heaters.
- b. The operation and fuel consumption of the emergency generator shall not exceed the following limits:

<u>Operating Hours</u> <u>(Hours/Year)</u>	<u>Fuel Consumption (Diesel Oil)</u> <u>(10³ Gal/Mo)</u>	<u>(10³ Gal/Yr)</u>
750	19.5	84

7.4.6 Emission Limitations

In addition to Condition 5.2.2 and the source-wide limitations in Condition 5.5, the generator is subject to the following:

Emissions of nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM) and volatile organic material (VOM) from the emergency generator shall not exceed the following limits [T1R]:

	<u>Emissions</u> <u>(Lb/Hr)</u>	<u>(Ton/Yr)</u>
Nitrogen Oxides	65.45	32.73
Carbon Monoxide	14.10	7.05
Sulfur Dioxide	4.31	2.16
Particulate Matter	4.6	2.3
Volatile Organic Material	5.2	2.6

The emission limits are based on the maximum capacity of the engine and using standard emission factors from USEPA's AP-42 Table 3.4-2. The annual limits are based on the engine operating a maximum of 750 hours per year. Compliance with annual limits shall be determined from a running total of 12 months of data.

The above limitations contain revisions to previously issued Permit 97080036. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the only change is the use of more recent emission factors as listed in Condition 7.4.12 [T1R].

7.4.7 Testing Requirements

None

7.4.8 Monitoring Requirements

None

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items which allow the source to demonstrate compliance with Condition 5.5.1 and 7.4.5 pursuant to Section 39.5 (7) (b) of the Act:

- a. Total natural gas usage for the boilers and heaters (Mcf/year).
- b. Fuel oil (#2) usage in the emergency generator (gal/mo) and hours of operation (hr/year).
- c. Annual aggregate NO_x, PM, SO₂, and VOM emissions from the boilers and emergency generator, based on fuel

consumption and the applicable emission factors, with supporting calculations.

7.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with applicable requirements within 30 days pursuant to Section 39.5 (7) (f) (ii) of the Act.

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.4.12 Compliance Procedures

- a. Compliance provisions addressing Condition 7.4.3(b) are not set by this permit as compliance is assumed to be achieved by the normal work practices and maintenance activities inherent in operation of natural gas fired boilers.
- b. Compliance with the emission limits in condition 5.5 shall be based on the recordkeeping requirements in Condition 7.4.9 and the emission factors and formulas listed below:

<u>Pollutant</u>	<u>Gas-Fired Boiler Emission Factor (lb/10⁶ ft³)</u>	<u>Emergency Generator Emission Factor (lb/mmBtu)</u>
NO _x	100.0	3.2
PM	7.6	0.0697
SO ₂	0.6	0.3747
VOM	5.5	0.09
CO	84.0	0.85

These are the emission factors for uncontrolled natural gas combustion in small industrial boilers (<100 mmBtu/hr), Tables 1.4.1 and 1.4.2, AP-42, Volume I, 5th Edition, March 1998 Revision.

The emission factors for the emergency generator are for uncontrolled large stationary diesel engines, Tables 3.4-1 and 3.4.2, AP-42, October 1996.

Boiler emissions (lb) = natural gas consumed multiplied by the appropriate emission factor.

7.5 Unit: Wastewater System
Control: None

7.5.1 Description

The wastewater system consists of various tanks, sludge holding pits, pump and other ancillary equipment used to treat process wastewater prior to discharge to the Des Plaines River.

7.5.2 List of Emission Units and Pollution control Equipment

Emission Unit Group	Description	Emission Control Equipment
Wastewater System	Wastewater System	None

7.5.3 Applicability Provision and Applicable Regulations

- a. The "affected wastewater system" for the purpose of these unit specific conditions, is the wastewater system, as described in Condition 7.5.1 and 7.5.2.
- b. The "affected storage tanks" for the purpose of these unit specific conditions, are the equalization tank (F-326A), the off-spec tank (F-326B) and the effluent equalization tank (F-330), which are part of the affected wastewater system.

7.5.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected wastewater system not being subject to 35 IAC 218.980, Other Emission Units, because the affected wastewater system is included in the industrial wastewater category, pursuant to 35 IAC 218.980(b)(2)(B).
- b. This permit is issued based on the affected wastewater tanks not being subject to New Source Performance Standard (NSPS) 40 CFR 60 Subpart Kb for Volatile Organic Liquid Storage Tanks because the standards only apply to tanks storing an organic liquid and these tanks store water [40 CFR 60.111b(k)].
- c. This permit is issued based on the affected wastewater system not being subject to the National Emission Standard for Hazardous Air pollutants (NESHAP) for Group IV Polymers and Resins, 40 CFR 63.1310, specifically, the wastewater provisions, because the affected wastewater system is located in a facility producing polystyrene using a continuous process, pursuant to 40 CFR 63.1330(e).

- d. This permit is issued based on the affected wastewater system not being subject to the NESHAP for Benzene Waste Operation, 40 CFR 61.340 because the wastewater being processed does not contain benzene.

7.5.5 Operational Limits and Work Practices

The Permittee shall operate, maintain and repair the wastewater system in accordance with good air pollution control practice in a manner that assures that the emission limits and standards of this permit shall be met at all times.

7.5.6 Emission Limitations

N/A

7.5.7 Testing Requirements

The Permittee shall test the composition of incoming and outgoing wastewater upon written request by the Illinois EPA.

7.5.8 Monitoring Requirements

N/A

7.5.9 Recordkeeping Requirements

- a. The Permittee shall keep a file that contains representative emission factors for the wastewater treatment system determined in accordance with Condition 7.5.12 for maximum VOM content in the incoming wastewater and typical performance for the wastewater system with supporting documentation.
- b. The Permittee shall keep records of the following operating records for the wastewater treatment system:
 - i. Wastewater throughput in the wastewater system (gallons/month).
 - ii. Analysis of wastewater for selected parameters.
- c. The Permittee shall keep records of the maintenance and operation of the affected wastewater system.
- d. The Permittee shall keep records of the VOM emissions from the affected wastewater system determined by the combination of the above operating records and the emission factors developed in Condition 7.5.9(a) with supporting calculations (tons/month and tons/year).

7.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of the affected wastewater with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

None

7.5.12 Compliance Procedures

Emission of VOM shall be determined on the recordkeeping requirements in Condition 7.5.9, and an appropriate USEPA computer model for wastewater treatment plant emission such as WATER9 model program or subsequent version of this program.

7.6 Unit: Cooling Towers
Control: None

7.6.1 Description

There are two cooling towers used to supply cool water for process operations. They are classified as non-contact towers.

Although heat exchangers that cooling water flow through are not listed as emission units, procedures related to detecting leaks in the heat exchanger system are included in this section.

7.6.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Cooling Towers	HIPS I/GPPS Cooling Tower and HIPS 3 Cooling Tower	None

7.6.3 Applicability Provisions and Applicable Regulations

- a. The "affected cooling towers" for the purpose of these unit-specific conditions, are cooling towers used to cool water for process operations.
- b. Each affected cooling tower is subject to the emission limits identified in Condition 5.2.2.
- c. The affected cooling towers are subject to 40 CFR 63.1328(a) which references the requirements of 40 CFR 63.104. The primary requirements of that section are periodic monitoring for leaks and prompt repair of any leaks detected in the heat exchange systems served by these cooling towers. See Condition 7.6.8 for monitoring and 7.6.9 for recordkeeping.
- d. Each affected cooling tower is subject to 35 IAC 218.301. This rule limits VOM emissions to 8 lb/hr if the VOM is photochemically reactive pursuant to 35 IAC 211.4690. Since these units do not have control, the provision for an 85% reduction by the control equipment is not an option.

7.6.4 Non-Applicability of Regulations of Concern

- b. This permit is issued based on the affected cooling towers not being subject to 35 IAC 212 Subpart L, because the affected cooling towers are not process units.

- b. This permit is issued based on the affected cooling towers not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected cooling towers do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

7.6.5 Work Practices

Pursuant to Section 39.5(7)(a) of the Act, the following work practices shall be implemented. If a leak is detected in a heat exchanger as evidenced by the monitoring procedure described in Condition 7.6.8, the Permittee shall repair the leak as soon as practical but not later than 45 days after indication of the leak.

Once the leak is repaired the operator shall confirm that the heat exchange system has been repaired within seven days of repair or startup [40 CFR 63.104(d)].

Delay of repair is allowed as described in 40 CFR 63.104(e).

7.6.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected cooling towers are subject to the following:

Emissions from the affected cooling towers shall not exceed the following limits:

<u>Cooling Tower</u>	<u>VOM Emissions</u>		<u>PM Emissions</u>	
	<u>(Lb/Mo)</u>	<u>(Ton/Yr)</u>	<u>(Lb/Mo)</u>	<u>(Ton/Yr)</u>
HIPS I/GPPS/ HIPS 3 (Combined)	200	1.0	2,100	12.4

These limits are based on continuous operation at maximum circulation rate and AP-42 emission factors.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1N].

The above limitations are being established in this permit pursuant to Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and

conditions in this permit that limit the VOM emissions from the affected cooling towers below the levels that would trigger the applicability of these rules, consistent with the information provided in the CAAPP application [T1N].

7.6.7 Operating Requirements

None

7.6.8 Monitoring Requirements

Pursuant to Section 39.5(7)(b) of the Act, the Permittee shall implement the following leak detection procedure for the heat exchange systems that use cooling water from the cooling towers listed in Condition 7.6.2.

- a. The heat exchange system shall be monitored for leaks according to 40 CFR 63.104 and 63.1328. If a leak is detected, the source shall follow the repair provisions of 40 CFR 63.104(d) or (e).
- b. Method 624 in 40 CFR 136 shall be used to detect any VOM in the inlet to each of the cooling towers each quarter. If no VOM is detected, that is all that is required. However, if VOM is detected, each individual heat exchange system must be tested at the entrance and exit to determine statistical differences between the two. See 40 CFR 63.104(b) for details.

7.6.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected cooling towers to demonstrate compliance with Conditions 5.5.1, 7.6.3, 7.6.5, 7.6.6 and 7.6.8, pursuant to Section 39.5(7)(b) of the Act:

- a. Circulation rate (gal/min) of the cooling water (may be design rate if willing to accept continuous operation at that rate).
- b. Quarterly results of heat exchanger leak detection procedure required by Condition 7.6.8, including date conducted and a list of chemicals if speciated.
- c. If repairs are required, date of repair, use of delay of repair provision, and date of retest for leak.
- d. VOM and PM emissions (tons/yr).

7.6.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected cooling towers with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Failure to do any of the following:

- a. Quarterly monitoring for leaks;
- b. Repair the leak within time specified; and
- c. Retest after repair.

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.6.12 Compliance Procedures

- a. VOM emissions shall be calculated using the AP-42 emission factor (Table 5.1-2) of 0.7 lb VOM per million gallons recirculated unless the quarterly analysis showed no detectable VOM, in which case emissions may be considered negligible (0.01 ton/mo).
- b. PM emissions shall be calculated using the AP-42 emission factor (Table 13.4-1) of 0.019 lb PM-10 per thousand gallons recirculated.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after January 21, 2004 (the date of issuance of the proposed permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

- a. The changes do not violate applicable requirements;

- b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;
- c. The changes do not constitute a modification under Title I of the CAA;
- d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and
- e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:
 - i. Describe the physical or operational change;
 - ii. Identify the schedule for implementing the physical or operational change;
 - iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;
 - iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and
 - v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

If monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

- a. The name and identification of the affected unit(s);
- b. The person(s) who will be performing sampling and analysis and their experience with similar tests;
- c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;
- d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;
- e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;
- f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and

- g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

- a. The name and identification of the affected unit(s);
- b. The date and time of the sampling or measurements;
- c. The date any analyses were performed;
- d. The name of the company that performed the tests and/or analyses;
- e. The test and analytical methodologies used;
- f. The results of the tests including raw data, and/or analyses including sample calculations;
- g. The operating conditions at the time of the sampling or measurements; and
- h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

- a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:
 - i. Illinois EPA - Air Compliance Section
Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276
 - ii. Illinois EPA - Air Regional Field Office
Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AE - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

- b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 ("Title I provisions") and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

- a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;
- b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and
- d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6) (c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7) (o) (vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7) (p) (ii) of the Act]:

- a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control

equipment), practices, or operations regulated or required under this permit;

- d. Sample or monitor any substances or parameters at any location:
 - i. At reasonable times, for the purposes of assuring permit compliance; or
 - ii. As otherwise authorized by the CAA, or the Act.
- e. Obtain and remove samples of any discharge or emission of pollutants; and
- f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source.

9.4 Obligation to Comply With Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7) (o) (iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12) (b) (iv) of the Act].

9.6.3 Retention of Records

- a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7) (e) (ii) of the Act].
- b. Other records required by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7) (p) (v) of the Act, the Permittee shall submit annual compliance certifications. The compliance certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by

permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 - Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

- a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.
- b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.
- c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

- a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:
 - i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency. Normally, an act of God such as lightning or flood is considered an emergency;

- ii. The permitted source was at the time being properly operated;
 - iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.
- b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit. This condition does not apply to the temporary removal of equipment for maintenance or repair.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

- a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;
- b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;
- c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations, or other terms or conditions of this permit; and
- d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15) (b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7) (o) (v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7) (i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal application. For a renewal to be timely it must be submitted no

later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5)(1), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1 - Summary of Storage Tanks

STORAGE TANKS^a

Tank Identification	Material Stored/Function	HAP ^b	Volume (gal)	Vapor Pressure (psia) ^c	Year Built	Submerged Loading Pipe/Spec Features
F-701 ^d	Styrene Storage Tank	Yes	4,600,000	0.1	1983	Yes ^c
F-708 ^d	Styrene Storage Tank	Yes	1,380,000	0.1	1972	Yes ^e
F-703 ^d	Styrene Storage Tank	Yes	126,000	0.1	1965	Yes ^f
F-704	Ethylbenzene Purge Tank	Yes	5,700	0.15	1966	Yes
F-706	Oligomer Tank	Yes ^b	7,900	0.01	Before 1982	No
F-707	Ethylbenzene Storage Tank	Yes	10,000	0.1	1965	Yes

^a This list includes feed tanks, that is vessels which hold material that is fed into the process, but not "mix tanks" in which two materials are mixed together. Storage and feed tanks are subject to 35 IAC 218 Subpart B, while mix tanks are process vessels. Either HIPS or GPPS can be produced in the process equipment. The names of the rubber solution feed tanks and recycle solvent hold tanks only reflect historical identification and do not limit the type of process that may be conducted in that equipment.

^b Styrene and ethylbenzene are both HAPs. Tanks which are not pure compounds are a mixture of the two. Oligomers are not HAPs but tanks have sufficient HAP contamination (7% which is greater than 0.1%) so that the tank does not meet criteria for an insignificant emission unit.

^c Vapor pressure at 70°F. Except for refrigerated tanks the vapor pressure is higher at maximum temperature but not high enough to activate additional requirements.

^d Unloading of barges and railcars is considered a process but the VOM emissions actually occur at these storage tanks as they are being filled. Pipelines from the barge unloading area and railcar unloading area must be included in the Leak Detection and Repair requirements of Condition 7.1.3.

e Refrigerated temperature 69°F or less, also insulated.

f This tank is kept at a constant level which effectively eliminates expansion and working losses.

10.2 Attachment 2 - Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

DGP:psj

10.3 Attachment 3

Attachment 3 - Equipment List for Condition 7.1.6

Group Name	Designation	Description of Emission Unit
A/B/C Furnaces	B301A	"A" Hot Oil Furnace
	B301B	"B" Hot Oil Furnace
	B301C	"C" Hot Oil Furnace
Styrene Tanks	F701	Styrene Tanks (Combined)
	F703	Styrene Storage Tank
	F708	Styrene Storage Tank
Misc. Tanks	F704	Ethyl Benzene Purge Tank
	F706	Oligomer Holding Tank
	F707	Ethyl Benzene Storage Tank
	F127	Mercaptan Batch Tank
	EF7	Mercaptan Room Vent Absorber Mineral Oil Tanks
GPPS Production Units	F212	GPPS Recycle Solvent Tank
	M234A	GPPS "A" Die Plate Fugitive
	M234B	GPPS "B" Die Plate Fugitive
	M234C	GPPS "C" Die Plate Fugitive
	M266	LRCP Die Plate Fugitive
HIPS Production Units	M276	LRCP Die Plate Fugitive
	F111	HIPS 1 Rubber Dissolver
	F121	HIPS 1 Rubber Solution Holding Tank
	F123	HIPS 1 Rubber Solution Holding Tank
	F113	HIPS 1 Additive Batch Tank
	M161A	HIPS 1 "A" Die Plate Fugitive
	M161B	HIPS 1 "B" Die Plate Fugitive
	M301	HIPS 1/GPPS Die Plate Electrostatic Precipitator
	M303	HIPS 1/GPPS Die Plate Electrostatic Precipitator
	F1111	HIPS 2 Rubber Dissolver
	F1123A	HIPS 2 "A" Rubber Solution Holding Tank
	F1123B	HIPS 2 "B" Rubber Solution Holding Tank
	F1123C	HIPS 2 "C" Rubber Solution Holding Tank
	M1161A	HIPS 2 "A" Die Plate Fugitive
	M1161B	HIPS 2 "B" Die Plate Fugitive
	M1303A	HIPS 2/HIPS 3 "A" Die Plate Electrostatic Precip.
	M1303B	HIPS 2/HIPS 3 "B" Die Plate Electrostatic Precip.
F-3111	HIPS 3 Rubber Dissolver	
F-3123A	HIPS 3 "A" Rubber Solution Tank	
	F-3123B	HIPS 3 "B" Rubber Solution Tank
	F-3123C	HIPS 3 "C" Rubber Solution Tank
	M-3161A	HIPS 3 "A" Die Head
	M-3161B	HIPS 3 "B" Die Head

Group Name	Designation	Description of Emission Unit
	M-3161C	HIPS 3 "C" Die Head
Cooling Towers	HIPS 1/GPPS E3380	Fugitive Emissions, Cooling Towers Fugitive Emissions, Cooling Tower, E-3380

10.4 Attachment 4 - NSR Netting Table

Attachment 4

Nonattainment NSR Applicability (VOM Emissions in Tons)

Contemporaneous Time Period of 1997 Through 2001

Emission Unit	Emission Unit	1999	2000	Actual	PTE	Proj	1994 ¹	1995 ¹	Avg ¹	Prev	Total
Project-affected Emission Units											
B301A	"A" Hot Oil Furnace	0.207	0.206	0.207	0.253	0.047					0.047
B301B	"B" Hot Oil Furnace	0.207	0.206	0.207	0.253	0.047					0.047
B301C	"C" Hot Oil Furnace	0.207	0.206	0.207	0.301	0.095					0.095
F701	Styrene Storage Tank	4.587	5.160	4.874	N/A	N/A	3.417	3.636	3.527	1.347	N/A
F708	Styrene Storage Tank	1.966	2.211	2.089	N/A	N/A	1.465	1.558	1.512	0.577	N/A
F701, F708	Styrene Storage Tanks (Combined)	6.553	7.371	6.962	11.200	0.280	4.882	5.194	5.038	1.924	2.204
F703	Styrene Day Tank	0.430	0.431	0.431	0.612	0.182					0.182
F704	Ethyl Benzene Purge Tank	0.045	0.048	0.047	0.054	0.008	0.035	0.042	0.039	0.008	0.016
F706	Oligomer Holding Tank	0.007	0.010	0.009	0.017	0.009	0.005	0.006	0.006	0.003	0.012
F212	GPPS Recycle Solvent Tank	0.046	0.140	0.093	0.177	0.084					0.084
F707	Ethyl Benzene Storage Tank	0.071	0.116	0.094	0.371	0.278	0.093	0.118	0.106	- 0.012	0.266
F111	HIPS 1 Rubber Dissolver	1.466	1.611	1.539	1.686	0.148					0.148
F121	HIPS 1 Rubber Solution Holding Tank	0.239	0.263	0.251	0.297	0.046					0.046

Emission Unit	Emission Unit	1999	2000	Actual	PTE	Proj	1994 ¹	1995 ¹	Avg ¹	Prev	Total
F123	HIPS 1 Rubber Solution Holding Tank	0.268	0.295	0.282	0.329	0.048					0.048
F113	HIPS 1 Additive Batch Tank	0.093	0.102	0.098	0.123	0.026				- 1.056	1.031
F127	Mercaptan Batch Tank	0.006	0.006	0.006	0.006	0.000	0.006	0.006	0.006	0.000	0.000
EF7	Mercaptan Room Vent Absorber	0.219	0.220	0.220	0.220	0.000					0.001
M161A	HIPS 1 "A" Die Plate Fugitive	0.039	0.047	0.043	0.061	0.018					0.018
M161B	HIPS 1 "B" Die Plate Fugitive	0.039	0.047	0.043	0.061	0.018					0.018
M234A	GPPS "A" Die Plate Fugitive	0.043	0.053	0.048	0.071	0.023					0.023
M234B	GPPS "B" Die Plate Fugitive	0.043	0.053	0.048	0.071	0.023					0.023
M234C	GPPS "C" Die Plate Fugitive	0.043	0.053	0.048	0.071	0.023					0.023
M266	LRCP Die Plate Fugitive	0.043	0.053	0.048	0.071	0.023					0.023
M276	LRCP Die Plate Fugitive	0.043	0.053	0.048	0.071	0.023					0.023
M301	HIPS 1 / GPPS Die Plate Electrostatic Precipitator	1.456	1.625	1.541	2.028	0.488					0.488
M303	HIPS 1 / GPPS Die Plate Electrostatic Precipitator	1.456	1.625	1.541	2.028	0.488					0.488
F1111	HIPS 2 Rubber Dissolver	1.544	1.830	1.687	1.905	0.218					0.218
F1123A	HIPS 2 "A" Rubber Solution Holding Tank	0.238	0.296	0.267	0.321	0.054					0.054
F1123B	HIPS 2 "B" Rubber Solution Holding Tank	0.238	0.296	0.267	0.321	0.054					0.054
F1123C	HIPS 2 "C" Rubber Solution Holding Tank	0.262	0.320	0.291	0.347	0.056					0.056

Emission Unit	Emission Unit	1999	2000	Actual	PTE	Proj	1994 ¹	1995 ¹	Avg ¹	Prev	Total
M1161A	HIPS 2 "A" Die Plate Fugitive	0.032	0.046	0.039	0.060	0.021					0.021
M1161B	HIPS 2 "B" Die Plate Fugitive	0.032	0.046	0.039	0.060	0.021					0.021
M1303A	HIPS 2 / HIPS 3 "A" Die Plate Electrostatic Precipitator	0.365	0.514	0.440	0.652	0.213	0.470	0.461	0.466	0.103	0.316
M1303B	HIPS 2 / HIPS 3 "B" Die Plate Electrostatic Precipitator	0.365	0.514	0.440	0.652	0.213	0.470	0.461	0.466	0.103	0.316
F-3111	HIPS 3 Rubber Dissolver	8.637	8.289	8.463	8.566	0.103				8.463	8.566
F-3123A	HIPS 3 "A" Rubber Solution Tank	0.219	0.137	0.178	0.282	0.104				0.282	0.386
F-3123B	HIPS 3 "B" Rubber Solution Tank	0.219	0.137	0.178	0.282	0.104				0.282	0.386
F-3123C	HIPS 3 "C" Rubber Solution Tank	0.317	0.288	0.303	0.342	0.040				0.342	0.382
M-3161A	HIPS 3 "A" Die Head	0.055	0.060	0.058	0.078	0.021				0.077	0.098
M-3161B	HIPS 3 "B" Die Head	0.055	0.060	0.058	0.078	0.021				0.077	0.098
M-3161C	HIPS 3 "C" Die Head	0.055	0.060	0.058	0.078	0.021				0.077	0.098
	Fugitive Emissions, Cooling Towers	1.260	1.260	1.260	0.160	0.000	1.260	1.260	1.260	0.000	-
E3380	Fugitive Emissions, Cooling Tower, E-3380	0.240	0.240	0.240	0.240	0.000	0.000	0.000	0.000	0.240	0.240
	Mineral Oil Tanks	0.185	0.192	0.189	0.231	0.042	0.018	0.019	0.019	0.170	0.212
Project Total						6.302					
Net Emissions Increase Subtotal											15.57

Emission Unit	Emission Unit	1999	2000	Actual	PTE	Proj	1994 ¹	1995 ¹	Avg ¹	Prev	Total
Other Contemporaneous Changes											
	Emergency Generator									0.519	0.519
F-3125	HIPS 3 Recycle Solvent Tank									0.088	0.088
F-3246	HIPS 3 Vent Knockout Pot									0.090	0.090
M-3248 A/B	HIPS 3 Vent Chiller									0.064	0.064
M-3248 Bypass	HIPS 3 Vent Chiller Bypass									0.273	0.273
	HIPS 3 Process Fugitives									2.450	2.450
	HIPS 3 Process Wastewater									1.620	1.620
B-301D	"D" Hot Oil Furnace									0.270	0.270
B-302, B-303	Boilers									0.205	0.205
Net Emissions Increase											21.15

¹ In 1996, BASF received a construction permit for the HIPS3 process. Some of the equipment that is modified/debottlenecked by this project, was also modified/debottlenecked by the HIPS3 project. As a result, some emission units have contemporaneous changes using two baseline periods (1994/1995 and 1999/2000).

