

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

O'Sullivan Films, Inc.
Winchester, Virginia
Registration No. 80333

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, O'Sullivan Films, Inc., has applied for a renewal of its Title V Operating Permit for its Winchester engineered film calendaring, coating, and printing facility. The DEQ has reviewed the application and has prepared a Title V Operating Permit.

Air Permit Writer: Trevor H. Wallace Date: 12/18/12
Trevor H. Wallace, P.E.

Air Permit Manager: Janardan R. Pandey Date: 12/19/12
Janardan R. Pandey, P.E.

FACILITY INFORMATION

Permittee

O'Sullivan Films, Inc.
 1944 Valley Avenue
 Winchester, Virginia 22601-2711

Facility

O'Sullivan Films, Inc.
 1944 Valley Avenue
 Winchester, Virginia 22601-2711

Plant ID No. 51-840-0060

SOURCE DESCRIPTION

NAICS Code	SIC Code	Manufacturing Description
326113	3081	Unsupported plastics film and sheet (except packaging) manufacturing
326130	3083	Laminated plastics plate, sheet, and shape manufacturing

O'Sullivan Films, Inc. (O'Sullivan) operates a polyvinyl chloride calendering, coating, laminating, and printing facility at 1944 Valley Avenue in Winchester. The plant produces flexible sheet vinyl plastics that are used for automotive, medical, industrial, and recreational purposes. Products are painted, laminated, or printed according to customer requirements.

The facility is a Title V major source of volatile organic compounds (VOC) and hazardous air pollutants (HAPs). The source is located in the City of Winchester, which is currently an attainment area for all pollutants (9 VAC 5-20-203 & 204). Previously, this area was designated as marginally nonattainment for ozone, and is currently designated as a volatile organic compound (VOC) and nitrogen oxides (NOx) emissions control area (9 VAC 5-20-206).

O'Sullivan is a major source under the Prevention of Significant Deterioration (PSD) program and operates under the following permits:

Permit Type	Permit Date(s)	Permitted Units/Processes
Minor New Source Review (NSR)	3/5/12 (hereafter referenced as "3/5/12 NSR permit")	Calender 2
Minor NSR	11/18/10	Artificial Leather Plant (ALP)
Minor NSR	4/21/05 as amended 3/28/06, 12/30/08, 12/6/11 (hereafter referenced as "4/21/05 NSR permit")	Laminators 1,3, & 4 Paint Line 3 & 4 Paint Kitchen Paint Laboratory 1966 Hot Oil Generator

Permit Type	Permit Date(s)	Permitted Units/Processes
State Operating Permit (SOP)	12/30/08	Calenders 1-3
Title V	7/1/06; modified 12/31/08	Facility-wide

COMPLIANCE STATUS

A full compliance evaluation of this facility was most recently conducted on 4/27/10. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these inspections and data records, O'Sullivan is determined to be in compliance with current permit requirements. Additionally, this facility has not been found to be in violation of any other state or federal applicable requirements at this time. As such, a compliance plan/schedule is not required as part of this permit renewal.

CHANGES SINCE PREVIOUS PERMIT ACTION

O'Sullivan's TV permit was modified in December 2008. That modification captured changes to the facilities two NSR permits and an SOP issuance occurring since the last TV permit renewal in July 2006. Permit revisions made at that time were primarily limited to changes in the facility's calendaring operations. Since the modification, an NSR permit for an artificial leather process line was authorized on 11/18/10. O'Sullivan will have 12 months from the artificial leather plant start-up date of 8/17/11 to request TV permitting. The 4/21/05 minor NSR permit was amended on 12/6/11 to revise the RTO1 and RTO2 combustion temperatures to be based upon the combustion zone temperature determined during the most recent performance test in which the permit required control efficiency was achieved and to remove references to Paint Line 2 (PL2), which has been shutdown. The 3/5/12 NSR permit was modified to include requirements for the Calender 2 Ribbon Grinder (CAL2RIBBONS). No other permitting has taken place. Changes to the TV permit at this renewal are noted in the application and as below. Condition numbering provided below is based on the 7/1/06 Title V permit, as modified 12/31/08, unless specified otherwise. During the course of renewing the TV permit, O'Sullivan requested a modification to the 11/18/10 minor NSR permit for the ALP. The ALP NSR permit modification was approved on 10/10/12, and these changes will be incorporated into the TV permit in a forthcoming action.

- *Permit-wide Changes*

The permit Section and Condition numbering system was reformatted to reflect current DEQ boilerplate.

Revised all references to "Director, Valley Region" to read "DEQ."

The minor NSR permit dates and condition numbers noted in the Title V condition citation for each applicable requirement were updated to reflect the current minor NSR permits.

Updated all opacity determinations to be performed as prescribed by EPA Method 9 (reference 40 CFR Part 60, Appendix A)

- *Section II - Emission Units*

Emission unit revisions are as follows:

- Post Embosser ID changed from PEMB to PEMB5
- PL2 was removed to reflect 2010 shutdown
- LAM2 was removed to reflect 2005 shutdown
- CAL2RIBBONS was added

Stack ID revisions are as follows:

- LAM1 changed from 49 to 11
- LAM 4 changed from 12 to 12A,B,&C
- PNTKTN2 now indicates 13-15, previously was not specified
- CAL2 limited to 21, previously included 21-22
- PEMB changed from 50-51 to 9-10
- RES-CONV1 changed from 25-40 to 25-40a,b,c

Pollution control device (PCD) ID revisions are as follows:

- RES-CONV1 PCD ID changed from CNTRL12-CNTRL26 to CNTRL11-CNTRL28
- RES-CONV2 PCD ID changed from CNTRL27-CNTRL35 to CNTRL27-CNTRL34

- *Section III - Fuel Burning Equipment Requirements - Emission unit ID# BLR1a, BLR1b, BLR2 and PHI*

Boiler 1 (BLR1) was removed from service in 2008 and replaced with two natural gas/#2 oil-fired boilers, BLR1a and BLR1b, each rated at 7.0 MMBtu/hr. DEQ exempted these units from NSR permitting on 4/11/08. These units were determined to emit more than 5 tpy SO₂ and, as such, were included in the Title V permit renewal.

Condition A.3. – Revised the SO₂ emission limit based on the removal boiler BLR1 and installation of boilers BLR1a and BLR1b.

Condition A.9. - Removed requirement to have ASTM certification with oil shipment.

Condition B.2. - Added language to require record retention for five year period.

- (New) *Section - Electrical Generators and Fire Pumps - Emission unit ID# GEN21, 22, 23 and PUMP24*

These emission units include two 375 HP and one 355 HP emergency diesel-fired generators installed in 1989 and one 267 HP diesel-fired fire pump installed in 1989. These three generators and one fire pump are subject to the requirements of the Stationary Reciprocating Internal Combustion Engine (RICE) NESHAP (MACT, Subpart ZZZZ). They are existing, stationary engines <500 HP located at a major source of HAPs. The permit was updated to include the necessary MACT, Subpart ZZZZ requirements.

- *Section IV - Painting Operations Requirements - Emission unit ID# PK, PLAB, PL3, and PL4*

Paint Line 2 (PL2) last operated in 2005, was removed from service in 2010, and was not included in the renewal application forms as an emission source. All references and requirements for PL2 were removed from the Title V permit at this renewal.

Condition A.1. - Updated to include the RTO control efficiency previously specified in Condition 3, which was removed with this action.

Condition A.4. - Updated to include the RTO control efficiency previously specified in Condition 5, which was removed with this action.

Condition B.1. – Updated to reflect NSR language by removing reference to manufacture's "specifications".

Condition B.2. – Updated to include the calculation method for V_{REC} and V_{RET} .

Condition C.6. and C.7. – Compliance demonstration language was removed since it included with the applicable emission and operating limits.

Condition C.8. - Omitted given the same requirement is included in Condition C.10.a.

Condition C.9., C.10.a., and C.11. - Updated to included RTO recordkeeping during periods when the paint kitchen (PK) is operating and exhausting.

Condition E.1. – Revised to require only semi-annual reporting as required by the 4/21/05 NSR permit.

Condition E.2. – Revised to require semi-annual reporting instead of quarterly and include updated language addressing the minimum RTO combustion zone temperature. Also updated to include control of the paint kitchen (PK)

- *Section V - Laminating Operations Requirements - Emission Unit ID# LAM1, LAM3 and LAM4*

Laminator 2 (LAM2) was permanently shutdown in 2005, and as such, was not included in the renewal application forms as an emission source. All references and requirements for LAM2 were removed from the Title V permit at this renewal.

Condition A.5. - Emissions from LAM3 are controlled by RTO1. As such, the visible emission requirement in Condition V.A.5 is not appropriate for LAM3. Visible emissions from RTO1 are addressed in Condition IV.A.10.

Condition A.7. – This condition was based on a previous requirement in the 4/21/05 NSR permit. The requirement was removed as part of the 12/06/11 amendment. Control of HAP emissions from the laminators are now regulated by the MACT, Subpart JJJJ. As such, requiring the owner to regularly investigate the technical feasibility of using coatings having lower volatile toxic compound or hazardous air pollutant content on LAM3 and LAM4 is deemed unnecessary.

Condition E.1. – With removal Condition A.7., there is no requirement to report findings of feasibility studies aimed at using coatings having lower volatile toxic compound or hazardous air pollutant content on LAM3 and LAM4.

- *Section VI - Product Rotogravure Printing Requirements – Emission Unit ID# LEMB*

Updated unit ID to reflect "LEMB".

- *Section VII - Calendering Operations Requirements - Emission Unit ID# CAL1 - CAL3, CAL2RIBBONS, CALMIX1a, 1b, 2a, 2b1, 2b2, 3a, 3b, and 3c*

CAL2RIBBONS, a plastic grinding emission unit, was included in the permit as this renewal. NSR review and permitting for this unit was carried out concurrently with the Title V renewal and all NSR permit changes were incorporated into the Title V permit, which include: Renumbering of permit condition numbers to reflect changes made in the superseding 3/5/12 NSR permit.

Condition A.4. - New condition included in the 3/5/12 NSR permit added to the Title V permit with this action and includes a five percent opacity visible emission limit for the CAL2RIBBONS baghouse stack.

Condition A.7. - New condition included in the 3/5/12 NSR permit added to the Title V permit with this action and requires the CAL2RIBBONS particulate emissions be controlled by baghouse.

Condition A.14. - New condition included in the 3/5/12 NSR permit added to the Title V permit with this action and includes emission limits for CAL2RIBBONS.

Condition B.1. and B.3. - Updated to require recordation of observations and actions.

Condition B.4. - New condition included in the 3/5/12 NSR permit added to the Title V permit with this action and requires periodic monitoring of the CAL2RIBBONS baghouse.

Condition C.1. - Updated to include recordkeeping for scheduled and unscheduled maintenance, operator training, malfunctions, and CAL2RIBBONS.

- *Section X - Hazardous Air Pollutants from Paper and Other Web Coating - Emission unit ID# PL3, PL4, LAM1 – LAM4, and PEMB1*

References to continuous monitoring system (CMS) were revised to continuous parameter monitoring system (CPMS).

Condition A.2 – Language excluding operating limit compliance “except during periods of startup, shutdown, and malfunction” was omitted since the exception is not explicitly included in the MACT, Subpart JJJJ, but is based on the vacated MACT rule, Subpart A (63.6(f)(1)).

Condition A.4. - This condition was not changed. O’Sullivan noted in the permit application that they will continue to operate in accordance with an internal SSM plan. The startup, shutdown, and malfunction (SSM) MACT exemption was vacated by the Federal Court of Appeals, but the vacatur addresses only 63.6(f)(1) and (h)(1). Accordingly the operating limits should be met at all times.

Condition C.2. - Added language to require record retention for five year period.

- *Section XI - Hazardous Air Pollutants from Organic Liquids Distribution - Facility-wide*

Condition B.1.a - This condition was specific to the first compliance report submittal requirement, the date for which has past. As such, this condition was removed with this renewal.

- *Section XII - Hazardous Air Pollutants from Industrial, Commercial and Institutional Boilers and Process Heaters*

Language was added to indicate this facility is subject to 40 CFR Part 63 Subpart DDDDD, which is currently undergoing revision.

- *Section XIII - Insignificant Emission Units*

With this renewal, a number of insignificant emission units (PPLSH, SLTBLK, APNCT, PPRMV, FBCRSH, BRCHRG, WCHL, CMPRS, DDTBL, SPRSC, ABLST, ORCYCL, HO33, P34, P35, HO36, TNK-FO33, TNK-K42, LP-1, LP-2, LP-3, T-1 through T-13, VAC2, VAC3, and PRDLB) were added to the permit, three previously listed storage tanks (TNK-HO41a, TNK-G13b and TNK-TC15) were removed, and one storage tank was relisted as actually being two tanks bearing the same description (TNK-FO28, now TNK-FO28A and TNK-FO28B).

- *Section XIV - Permit Shield & Inapplicable Requirements*

The Inapplicable Requirements section of the permit was expanded to include 40 CFR 98 - Mandatory Greenhouse Gas Reporting.

- *Section XV - General conditions*

The general conditions of the Title V permit were updated to reflect changes made to the Title V boilerplate since O'Sullivan's permit was modified.

- *Compliance Assurance Monitoring (CAM) Plan -Attachment A*

Revised to include updated language addressing the minimum RTO combustion zone temperature and included the Paint Kitchen as a potential emission unit served by RTO2. Reduced stack testing frequency to once every five years from once every three years, given the facility has operated RTO2 in compliance since the CAM requirement inception in 2001. At the time of the CAM plan approval, it was noted that a reduced monitoring frequency would be permitted following two rounds of compliant testing, if requested by the permittee.

- *Compliance Assurance Monitoring (CAM) Plan -Attachment B*

Revised to include updated language addressing the minimum RTO combustion zone temperature and removed PL2 is a potential emission unit served by RTO1.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Equipment to be operated at the facility is included in Table 1 below:

Table 1 – Significant Emission Units

Emission Unit ID	Stack ID	Emission Unit Description	*Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
BLR1a	1a	Bryan Boiler, Model RV 700	7.0 MMBtu/hr	-	-	-	-
BLR1b	1b	Bryan Boiler, Model RV 700	7.0 MMBtu/hr	-	-	-	-
BLR2	2	Cleaver Brooks, Nat. Gas/No. 2 Oil fired Industrial Boiler, installed 1972	16 MMBtu/hr	-	-	-	-
PH1	3	American Hydrotherm Calender No. 3 1966 Hot Oil Generator, installed 1988	16.8 MMBtu/hr	-	-	-	4/21/05 NSR permit
GEN21	-	Diesel emergency generator Bldg 2	375 HP (engine), 200 kW (generator)	-	-	-	-
GEN22	-	Diesel emergency generator Bldg 14A	375 HP (engine), 200 kW (generator)	-	-	-	-
GEN23	-	Diesel emergency generator Bldg 54	375 HP (engine), 200 kW (generator)	-	-	-	-
PUMP24	-	Diesel fire control system water pump	267 HP (engine)	-	-	-	-
Painting Operations							
PK	4 or 5	Paint kitchen	-	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL1 or CNTRL2	VOC, VHAP	4/21/05 NSR permit

Emission Unit ID	Stack ID	Emission Unit Description	*Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
PLAB	49-51	Paint testing laboratory	-				4/21/05 NSR permit
PL3	4	Paint Line comprised of spray booths 1 & 2 (airless air assisted spider-arm applicator on continuous vinyl web), flash-off zones, and drying ovens	-	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL1	VOC, VHAP	4/21/05 NSR permit
PL4	5	Paint Line comprised of spray booths 1 & 2 (airless air assisted spider-arm applicator on continuous vinyl web), flash-off zones, and drying ovens	~5000 linear ft vinyl /hr	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL2	VOC, VHAP	4/21/05 NSR permit
Laminating Operations							
LAM1	11	Lembo Laminator (including embossing and adhesive material mixing) (water-based low-VOC adhesives and primer applied by roller)	-	-	-	-	4/21/05 NSR permit
LAM3	4	Kawakami Laminator (including adhesive material mixing) (solvent-based adhesives applied by doctor blade and/or roller with capabilities for using water-based low-VOC adhesives and primer)	20 m vinyl/min	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL1	VOC, VHAP	4/21/05 NSR permit
LAM4	12A 12B 12C	Inta-Rota Laminator (including adhesive material mixing) (solvent-based adhesives applied by roller with capabilities for using water-based low-VOC adhesives and primer)	20 m vinyl/min	-	-	-	4/21/05 NSR permit

Rotogravure Printing Operations							
PNTKTN2	13-15	Paint kitchen for Lembo (printing ink mixing)	-	-	-	VOC, VHAP	-
LEMB	16 - 19	Lembo 4-Station Rotogravure Printing Press (vinyl substrate) with drying ovens	-	-	-	-	-
Calendering Operations							
CAL1	20	Farrel Calender	≥ 100 pounds/hr	-	-	-	-
CALMIX1a	-	Pre-blender for Calender 1 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey baghouse (vents indoors)	CNTRL3	PM, PM-10	-
CALMIX1b	N/A	Banbury mixer for Calender 1 (raw material mixing equipment)	≥ 100 pounds/hr	Farr baghouse (vents indoors)	CNTRL4	PM, PM-10	-
CAL2	21	Nippon Roll Calender	≥ 100 pounds/hr	-	-	-	3/05/12 NSR permit
CALMIX2a	-	Banbury mixer for Calender 2 (raw materials mixing)	≥ 100 pounds/hr	Osprey fabric filter (2 units) (vents indoors)	CNTRL 12	PM, PM-10	3/05/12 NSR permit
CALMIX2b1	-	Pre-blender for Calender 2 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey fabric filter (vents indoors)	CNTRL6	PM, PM-10	3/05/12 NSR permit
CALMIX2b2	-	Pre-blender for Calender 2 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey fabric filter (vents indoors)	CNTRL7	PM, PM-10	3/05/12 NSR permit
CAL2-RIBBONS	22	Plastic grinding	≥ 100 pounds/hr	Flex-Kleen baghouse	CNTRL7a	PM PM-10	3/05/12 NSR permit
CAL3	24	Kraffanlagen Heidelberg Calender	≥ 100 pounds/hr	-	-	-	-
CALMIX3a	-	Pre-blender for Calender 3 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey baghouse (3 units) (vents indoors)	CNTRL8	PM, PM-10	-
CALMIX3b	-	Banbury mixer for Calender 3 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey baghouse (vents indoors)	CNTRL9	PM, PM-10	-

CALMIX3c	-	Banbury mixer for Calender 3 (raw material mixing equipment)	~10,000 lb/hr	Osprey baghouse (vents indoors)	CNTRL10	PM, PM-10	-
Post Embossing Operations							
PEMB1	50-51	Post Embosser (includes embosser and optional water-based adhesive back coater and slitter)	-	-	-	VOC, HAPs	-
Materials Handling Operations							
RES-CONV1	25 – 40c	Bulk resin transfer and storage (pneumatic) for Calenders 1 & 2 (includes rail car and tank truck unloading to bulk silos and transfer from bulk silos to day bins and mixing stations)	~10 tons/hr	Flex-Kleen baghouse (Stacks 25 - 39); Pacific Engineering Company baghouse (Stack 40)	CNTRL11 - CNTRL28	PM, PM-10	-
RES-CONV2	41 - 48	Bulk resin transfer and storage (pneumatic) for Calender 3 (includes rail car and tank truck unloading to bulk silos and transfer from bulk silos to day bins and mixing stations)	~10 tons/hr	Pacific Engineering Company baghouse	CNTRL27 - CNTRL34	PM, PM-10	-
Storage Tanks							
TNK-P21	-	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P22	-	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P23	-	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P24	-	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P25	-	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P26	-	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-TC21	-	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC22	-	Bulk storage tank for topcoat	15,000 gal	-	-	-	-

TNK-TC23	-	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC24	-	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC25	-	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC26	-	Bulk storage tank for topcoat	15,000 gal	-	-	-	-

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of the 2011 annual emission statement is attached as Attachment A. Emissions are summarized in the following tables.

Table 2 – 2011 Actual Criteria Pollutant Emissions

Criteria Pollutant Emissions (tons/yr)						
Pollutant	VOC	CO	SO ₂	NO _x	PM	PM-10
Total	54.0	6.5	0.04	7.5	17.0	17.0

FUEL BURNING EQUIPMENT REQUIREMENTS - Emission Units BLR1a, BLR1b, BLR2 and PH1

Limitations

O'Sullivan has one existing, one permitted, and two exempt fuel-burning units: the two exempt boilers rated for 7.0 MMBtu/hr each (BLR1a and BLR1b), the existing boiler is rated at 16 MMBtu/hr (BLR2), and the NSR permitted hot oil generator is rated at 16.8 MMBtu/hr (PH1). The boilers provide steam for process operations and for heating buildings. The hot oil generator is used on Calender 3. All four units primarily fire natural gas and use No. 2 oil as a backup fuel.

The following limitations are State BACT requirements for PH1 from the 4/21/05 NSR permit. Please note that the condition numbers are from the 4/21/05 NSR permit, a copy of which is included as Attachment B.

- Condition 16, limiting allowable fuels to natural gas and distillate oil;
- Condition 21, limiting emissions from the hot oil generator;
- Condition 23, limiting visible emissions from the hot oil generator to 10 percent.

The boilers are subject to general fuel-burning equipment limitations based on the rules for existing sources (9 VAC 5 Chapter 40). The boilers are not covered under a NSR permit because they are either exempt (BLR1a and BLR1b) or were constructed prior to applicable permitting dates (BLR2).

The following Virginia Administrative Codes (VAC) that have specific emission requirements were determined to be applicable to the boiler:

- 9 VAC 5-40-900: Particulate matter (PM) emissions are limited as determined using the equation $E = 0.39H$, where E is the emission limit in lbs/hr and H is the actual heat input in MMBTU/hr.
- 9 VAC 5-40-930: Sulfur dioxide emissions from fuel burning equipment installations are limited as determined by the equation $S = 2.64K$, where S is the emission limit in lbs/hr and K is the total heat input capacity in MMBTU/hr. The previous limit of 137 lbs/hr based on the combined rated heat input of 52 MMBTU/hr for BLR1 and BLR2 was revised at this renewal to 79 lbs/hr, which is based on the combined boiler rated heat input capacity of 30 MMBTU/hr.
- 9 VAC 5-40-940: Visible emissions from existing fuel burning equipment are restricted to twenty percent (20 percent) opacity except during one six-minute period in any one hour in which visible emissions shall not exceed sixty percent (60 percent) opacity.
- VAC 5-20-180: Boiler operators shall be adequately trained to properly operate the equipment. This training shall be recorded and made available for inspection.

A condition is included in the Title V permit to limit fuels used in the boiler to natural gas and No. 2 oil. The permit also limits the sulfur content of the fuel to 0.5 percent. The limit codifies the facility's current practice and prevents further monitoring requirements that would be necessary if residual oil was used.

The Boiler MACT (40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters) is currently under

review by EPA. The facility will be required to comply with any applicable Boiler MACT requirements as described in the permit Section - Hazardous Air Pollutants from Industrial, Commercial and Institutional Boilers and Process Heaters.

Monitoring and Recordkeeping

Opacity has been chosen as a surrogate indicator for PM emissions. During periods in which distillate oil is used in BLR1a, BLR1b, BLR2 or PH1, O'Sullivan will perform weekly inspections of the boilers or generator stack(s) to determine the presence of visible emissions. If visible emissions are observed during the inspection an EPA Reference Method 9 (40 CFR Part 60, Appendix A) visible emission evaluation (VEE) will be conducted for a minimum of six minutes. If any of the observations exceed the applicable opacity limit, the observation period shall continue until a total of 60 minutes of observation are completed.

At maximum boiler capacity, the particulate matter emission limit for BLR1a, BLR1b and BLR2 is 11.7 lbs/hr, based on the equation $E = 0.39H$, as included in 9 VAC 5-40-900.B. and discussed above. A conservative estimate of the maximum potential PM-10 emissions from operating boilers BLR1a, BLR1b and BLR2 using No. 2 fuel oil is shown in the following table. The AP-42 emission factor used includes both filterable and condensable PM (<0.3 μm).

Table 3 – Potential PM-10 emissions from boilers BLR1a, BLR1b and BLR2

Fuel Oil #	Equipment Max Rated Capacity	Maximum Hourly Throughput	AP-42 Emission Factor	Maximum Emissions	Calculated Emission Limit
--	(MMBTU/hr)	(mgal/hr)	(lb/1000 gal)	(lbs/hr)	(lbs/hr)
2	30	0.224	3.3	0.74	11.7

The maximum potential PM-10 emissions using the AP-42 emissions factors is far below the allowable limit. Therefore, there is reasonable assurance that the particulate matter emission limit will not be violated as long as the opacity limit is not exceeded. Boiler inspection reports have revealed no past violations of the opacity limitations contained in this permit.

The allowable sulfur dioxide emission limit for BLR1a, BLR1b, and BLR2 is 79 lbs/hr. The 7/1/06 Title V permit Section II.A.3. was updated to reflect the limit change from 137 lb/hr, which was based on the combined emissions from BLR1 and BLR2.

The AP-42 emission factor for sulfur dioxide assumes that all of the sulfur is converted to sulfur dioxide. Potential sulfur dioxide emissions from the boilers (based on use of No. 2 oil) are included in the following table.

Table 4 – Potential sulfur dioxide emissions from boilers BLR1a, BLR1b and BLR2

Fuel Oil #	Equipment Max Rated Capacity	Maximum Hourly Throughput	AP-42 Emission Factor	Maximum Sulfur Content	Maximum Emissions	Calculated Emission Limit
--	(MMBTU/hr)	(mgal/hr)	(lb/1000 gal)	(%)	(lbs/hr)	(lbs/hr)
2	30	0.224	142*S	0.5	15.9	79

Since the AP-42 emission factor assumes that all of the sulfur in the fuel is converted to sulfur dioxide, the sulfur dioxide emission limit cannot be exceeded as long as the sulfur content of the fuel does not

exceed 0.5 percent. The permit sets the maximum allowable sulfur content at 0.5 percent. The permittee is required to obtain a certification from the fuel supplier with each shipment of distillate oil, showing the sulfur content (in percent) of the oil. The permittee is required to retain the fuel certifications. If only distillate oil is used, the SO₂ limit will not be violated. Accordingly, keeping records of the type of fuel purchased and its sulfur content meets the periodic monitoring requirement for SO₂ emissions.

The permittee is required to keep records of annual throughput of fuel, weekly visible emission inspections, VEEs, boiler/generator operator training and boiler/generator maintenance. Emission units BLR1a, BLR1b, BLR2 and PH1 are not subject to Compliance Assurance Monitoring (CAM) (40 CFR 64) requirements. The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for these units.

ELECTRICAL GENERATORS AND FIRE PUMPS - Emission unit ID# GEN21, 22, 23 and PUMP24 (Emergency Stationary Reciprocating Internal Combustion Engine (RICE))

O'Sullivan has three emergency generators (GEN21, 22, 23) and one emergency fire pump (PUMP24). The generators include two 375 HP (GEN21 and 22) and one 355 HP (GEN23) emergency diesel-fired engines installed in 1989, and one 267 HP diesel-fired fire pump engine installed in 1989. These four engines are subject to the requirements of the Stationary Reciprocating Internal Combustion Engine (RICE) NESHAP (MACT, Subpart ZZZZ). They are existing, stationary engines <500 HP located at a major source of HAPs. The permit was updated to include the necessary MACT, Subpart ZZZZ requirements.

Limitations

In accordance with the MACT, 40 CFR 63 Subpart ZZZZ, the following conditions are applicable to GEN21, 22, 23 and PUMP24

- | | |
|--------------|--|
| Condition 16 | This condition establishes the hourly operational conditions for the emergency stationary RICE. |
| Condition 17 | By May 3, 2013, the CI engines (MACT Group 2) shall meet the applicable work practice standards in 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary RICE). |
| Condition 18 | In accordance with Table 2c of the MACT, Subpart ZZZZ, by May 3, 2013, during periods of startup the permittee must minimize the time spend at idle for the emergency engines (Ref. MACT Group 2) and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. |

Monitoring and Recordkeeping

The required maintenance and operating plans assure compliance with MACT requirements to maintain and operate the engine in accordance with the manufacturer's written instructions. The facility is also required to keep records of all scheduled and unscheduled maintenance and the operating hours for each of the engines (after 5/3/13) to ensure that each continues to meet the definition of emergency-use, as found the MACT. The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for these units.

Reporting

GEN21, 22, 23 and PUMP24 are all exempt from notification requirements under 40 CFR 63.6645(a)(5).

PAINTING OPERATION REQUIREMENTS – Emission Unit IDs PK, PLAB, PL3, PL4

Limitations

The following VOC limitations are State BACT requirements from the 4/21/05 NSR permit for the PK, PLAB, PL3, and PL4. The condition numbers noted below correspond to the 4/21/05 NSR permit, which is included with this SOB as Attachment B.

- Condition 4, requiring that VOC emissions from PL3 be controlled by an 80 percent efficient capture system and a regenerative thermal oxidizer (RTO) and that the RTO shall be provided with adequate access for inspection;
- Condition 5, requiring that VOC emissions from PL4 be controlled by permanent total enclosure and an RTO and that the RTO shall be provided with adequate access for inspection;
- Condition 6, requiring that VOC emissions from PK be controlled by permanent total enclosure and an RTO having at least 95.0 percent destruction efficiency and that the RTO shall be provided with adequate access for inspection;
- Condition 7, requiring that RTO1 serving PL3 achieve a 95.0 percent destruction efficiency;
- Condition 8, requiring that RTO2 serving PL4 achieve a 98.6 percent destruction efficiency;
- Condition 9, listing the criteria for total enclosure;
- Condition 10, specifying the combustion zone temperature and residence time for RTO1 controlling PL3 emissions;
- Condition 11, specifying the combustion zone temperature and residence time for the RTO2 controlling PL4 emissions;
- Condition 15, limiting PL4 operating hours to 7,140 per year, calculated monthly as the sum of each consecutive 12-month period;
- Condition 17, authorizing use of natural gas and distillate oil as auxiliary fuels for the RTOs;
- Condition 22, limiting annual VOC emissions from the paint lines and PK;
- Condition 24, limiting visible emissions from each RTO to 5 percent opacity.

O'Sullivan is located in Winchester, a VOC Control Area, and is therefore subject to applicable Reasonably Available Control Technology (RACT) standards in 9 VAC 5 Chapter 40 of the VAC. The following requirements from 9 VAC 5 Chapter 40, Article 32 (Emission Standards for Vinyl Coating Application Systems (Rule 4-32)) are applicable to the paint lines (PL3 and PL4):

- 9 VAC 5-40-4480 A and B and 9 VAC 5-40-4490, limiting VOC emissions from any paint line to 3.8 lbs per gallon applied and listing control methods to achieve the emissions limit (e.g., use of waterborne or high-solids coatings, carbon adsorption, incineration, or other equivalent technology);

- 9 VAC 5-40-4540 C, specifying an alternative emission standard if the 3.8 lbs VOC/gal limit is not achieved through use of compliant coatings;
- 9 VAC 5-40-4540 B, clarifying that the emission standards apply either coating by coating or to the volume-weighted average of coatings where the coatings are used on a single laminator and the coatings are the same type or perform the same function (averaging not to exceed 24 hours); and
- 9 VAC 5-40-4480 C, requiring that reasonable precautions be taken to minimize the discharge of emissions from cleaning and purging operations and specifying methods of minimization.

The following requirement, related to CAM, establishes a threshold at which O'Sullivan is required to develop a Quality Improvement Plan (QIP) for its RTOs:

- For PL3 and PL4, the permittee shall develop a QIP according to 40 CFR 64.8 if more than six excursions from the indicator range specified in the applicable CAM Plan (PL4 & PK: Attachment A and PL3 & PK: Attachment B of the permit) occur within a semi-annual period. An excursion shall be defined as any three-hour period of operation during which the average combustion zone temperature is outside of the indicator range specified in the CAM Plan. Additionally for PL3, the permittee shall develop a QIP if more than one excursion from the indicator range specified in Attachment B of the permit occurs within a semi-annual period. An excursion shall be defined as a monthly static pressure verification that is less than 70 percent of the value determined during initial capture efficiency testing. Semi-annual periods are as indicated by the reporting requirements in Condition 169.

Monitoring

The monitoring requirements for PL3, PL4, PK, and PLAB in the 4/21/05 NSR permit meet Part 70 requirements and are included in the Title V permit, Section – Painting Operations Requirements.

The permit requires O'Sullivan to continuously measure and record the combustion zone temperature in RTO1 and RTO2. There are no monitoring requirements related to retention times (specified in Conditions 10 and 11 of the 4/21/05 NSR permit) because the required RTO retention time is a design parameter and represents the retention at maximum flow rate (the minimum retention time).

For PL3, PL4, PK, and the PLAB, the permittee will monitor and record monthly the coating usage, VOC content of the coating, and the number of hours of operation. Using these data, the permittee will calculate monthly and annual VOC throughput and emissions to demonstrate compliance with emission limitations. The permit requires that annual emissions calculations be based on the following formula (derived from Condition 15 of the 4/21/05 NSR permit):

$$V_{EM} = (V_{TPUT} - V_{REC} - V_{RET}) \times (1 - OCE)$$

Where:

- V_{EM} = Annual emissions of VOCs in tons.
- V_{TPUT} = Annual throughput of VOCs in tons.
- V_{REC} = Annual amount of VOCs recovered or disposed of off-site in tons, calculated as off-site disposal * wastestream solvent percentage.
- V_{RET} = Annual amount of VOCs retained in the products in tons, calculated as product weight * solvent retention percentage.
- OCE = overall control efficiency (the product of capture efficiency and control device destruction efficiency), as a mass fraction

The value for VOCs retained in product used in emission calculations must be approved by the DEQ. Capture efficiencies and control device destruction efficiencies to be used are that indicated by the most recent performance testing.

For the purposes of calculating VOC emissions, the permit requires a tiered approach to determining VOC content in coating. As shown in Table 5 below, O'Sullivan continues to operate at levels well below its emission limits for PL3, PL4, PK and the PLAB. Because of the large margin of compliance, the permit allows the VOC content of coating as supplied used in emission calculations to be based on manufacturer formulation data as shown on the Material Safety Data Sheet (MSDS) for each product. If a range of VOC content values is given, calculations shall be based on the maximum value. However, once the monthly calculation of actual emissions indicates emissions at 75 percent or more of the allowable annual emissions, quarterly testing of each product formulation is required. The testing shall be determined, by either the permittee or supplier, using EPA Reference Method 24 (40 CFR 60, Appendix A). Each coating shipment must be identified by a product formulation number that may be correlated to Reference Method 24 results. Emission calculations must be based on the most recent test results for each formulation. The quarterly tests may be discontinued after actual annual emissions are below 75 percent of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each formulation be used in lieu of MSDS information.

The paint lines are controlled by RTOs that are subject to extensive parametric monitoring requirements. Periodic stack testing of the RTOs is also required by the facility's CAM Plans (see discussion below). Emissions vary little due to use of controls and of coatings having similar VOC content. It is not economically reasonable to perform reference method testing on the coatings if actual emissions are below 75 percent of allowable emissions. The likelihood of an emissions violation when actual emissions are below the 75 percent threshold is low given the other monitoring requirements imposed in the permit. The required monitoring of RTO parameters, periodic stack testing, VOC usage records, and the obligation to test coatings if the actual/allowable emissions ratio exceeds 75 percent provide a reasonable assurance of compliance with the limits and therefore satisfies the periodic monitoring requirement.

Table 5 – Past Actual Annual VOC emissions from RTO1 and RTO2 (tons)

YEAR	RTO1 (PL3, LAM3, PK)	RTO2 (PL4, PK)
2010	16.1	5.53
2009	9.3	8.29
2008	18.2	8.29
2007	18.2	8.96
2006	18.7	8.37

There is no monitoring for the visible emissions requirement. Historically, there have been no visible emissions from the paint line RTOs. Operation of the painting operations is therefore not expected to result in visible emissions.

O'Sullivan has two control devices that are subject to CAM, the requirements of which are found at 40 CFR 64. RTO1 and RTO 2 are subject to CAM because their post-control emissions exceed major-source levels and both sources are permit limited. CAM requirements remain largely unchanged at this renewal. However, the Plans were both updated to specify the required RTO combustion temperature be based on the combustion zone temperature determined during the most recent performance test in which the permit required VOC control efficiency was achieved.

The monitoring prescribed for the paint lines in O'Sullivan's minor NSR permit satisfies much of the CAM requirements. Justification and rationale for the CAM Plans are included in the 2001 and 2006 permit SOBs and are appended as Attachment D. The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for these units.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by Condition 26 of the 4/21/05 NSR permit, which is included as Attachment B. The Title V recordkeeping requirements include:

- Certified MSDS or VOC Data Sheet showing VOC content of each coating used;
- EPA Reference Method 24 or 24A test results, if the testing requirement is triggered by actual emissions;
- The monthly and rolling annual throughput of each coating;
- VOC recovered each month;
- Monthly and rolling annual emissions of VOC;
- Average combustion zone temperature of each RTO during actual painting operations;
- Notation of any three-hour periods during actual painting operations during which the average combustion zone temperature was below the required value;
- For each RTO, acquisition read outs showing the combustion zone temperature;
- All performance test results, including stack testing and testing to verify that enclosures meet the permanent total enclosure criteria enumerated in the permit; and
- Data required to show compliance with CAM Plans

Testing

As mandated by Condition 13 of the 4/21/05 NSR permit, the Title V permit also requires that the facility be constructed to allow for emissions testing and monitoring upon reasonable notice.

The permit requires periodic stack testing of each RTO using EPA Reference Method 25 or 25A to confirm ongoing compliance.

Reporting

As required by Condition 27 of the 4/21/05 NSR permit, the Title V permit includes semi-annual reporting of periods in which the combustion zone temperature in either RTO is below the required value. O'Sullivan is also required to notify the DEQ of proposed performance testing dates and provide a written protocol.

The reporting required by 40 CFR 64 (CAM) has been carried forward with this permit renewal.

Streamlined Requirements

Condition 24 of the 4/21/05 NSR permit contains an opacity limit of five percent, which has been included in the Title V permit. The permit opacity limit is more stringent than the regulatory limit of 20 percent in 9 VAC 5-50-80. Accordingly, compliance with the permit limit ensures compliance with the regulatory limit, so the regulatory limit has not been included in the Title V permit.

LAMINATING OPERATIONS – Emission Unit ID #s LAM1, LAM3 and LAM4

Limitations

The following limitations are State BACT requirements from the 4/21/05 NSR permit. Requirements related to operation of RTO1, which serves LAM 3, are included in Title V permit, Section - Painting Operations Requirements. Please note that the condition numbers are from the 4/21/05 NSR permit, a copy of which is included with this SOB as Attachment B.

- Condition 2, stating VOC emissions from LAM1 shall be controlled by use of waterborne coatings only;
- Condition 3, stating that VOC emissions from LAM3 shall be controlled by a 95 percent efficient capture system and an RTO;
- Condition 20, limiting the VOC throughput to LAM1 to 9.8 tons per year;
- Condition 22, limiting annual VOC emissions from LAM1, LAM3, and LAM4 to 9.8 tpy, 100 tpy, and 100 tpy, respectively.

The following section of the VAC is applicable to LAM1, LAM3 and LAM4:

- 9 VAC 5-50-80, Standard for Visible Emissions, New and Modified Sources

O'Sullivan is located in Winchester, a VOC Control Area, and is therefore subject to applicable Reasonably Available Control Technology (RACT) standards in 9 VAC 5 Chapter 40 of the VAC. The following requirements from 9 VAC 5 Chapter 40, Article 32 (Emission Standards for Vinyl Coating Application Systems (Rule 4-32)) are applicable to the laminators:

- 9 VAC 5-40-4480 A and B and 9 VAC 5-40-4490, limiting VOC emissions from any laminator to 3.8 lbs per gallon applied and listing control methods to achieve the emissions limit (e.g., use of waterborne or high-solids coatings, carbon adsorption, incineration, or other equivalent technology);
- 9 VAC 5-40-4540 C, specifying an alternative emission standard if the 3.8 lbs VOC/gal limit is not achieved through use of compliant coatings;
- 9 VAC 5-40-4540 B, clarifying that the emission standards apply either coating by coating or to the volume-weighted average of coatings where the coatings are used on a single laminator and the coatings are the same type or perform the same function (averaging not to exceed 24 hours); and
- 9 VAC 5-40-4480 C, requiring that reasonable precautions be taken to minimize the discharge of emissions from cleaning and purging operations and specifying methods of minimization.

The following requirement, derived from the federal CAM Rule (40 CFR 64), establishes a threshold at which O'Sullivan is required to develop a QIP for RTO1:

For LAM3, the permittee shall develop a QIP according to 40 CFR 64.8 if more than six excursions from the indicator range specified in the CAM Plan (Attachment A) occur within a

semi-annual period. An excursion shall be defined as any three-hour period of operation during which the average combustion zone temperature is outside of the indicator range specified in the CAM Plan. Semi-annual periods are as indicated by reporting requirements in Condition 169.

Monitoring

The monitoring requirements for RTO1 in the 4/21/05 NSR permit meet Part 70 requirements and are included in the Title V permit, Section - Painting Operations Requirements.

For each laminator, the permittee will monitor and record on a monthly basis coating and adhesive usage, VOC of the coating or adhesive, and the number of hours of operation. Using these data, the permittee will calculate monthly and annual VOC throughput and emissions to demonstrate compliance with emission limitations. The permit provides formulas to be used in calculating emissions. For emissions from LAM3, which is served by RTO1, the formula is:

$$V_{EM} = (V_{TPUT} - V_{REC} - V_{RET}) \times (1 - OCE)$$

Where:

V_{EM} = Annual emissions of VOCs in tons.

V_{TPUT} = Annual throughput of VOCs in tons.

V_{REC} = Annual amount of VOCs recovered or disposed of off-site in tons, calculated as off-site disposal * wastestream solvent percentage.

V_{RET} = Annual amount of VOCs retained in the products in tons, calculated as product weight * solvent retention percentage.

OCE = overall control efficiency (the product of capture efficiency and control device destruction efficiency), as a mass fraction

To calculate uncontrolled emissions from LAM1 and LAM4, the following equation will be used:

$$V_{EM} = V_{TPUT} - V_{REC} - V_{RET}$$

Where:

V_{EM} = Annual emissions of VOCs in tons.

V_{TPUT} = Annual throughput of VOCs in tons.

V_{REC} = Annual amount of VOCs recovered or disposed of off-site in tons, calculated as off-site disposal * wastestream solvent percentage.

V_{RET} = Annual amount of VOCs retained in the products in tons, calculated as product weight * solvent retention percentage.

OCE = overall control efficiency (the product of capture efficiency and control device destruction efficiency), as a mass fraction

Annual emissions are to be calculated monthly as the sum of each consecutive 12-month period.

For the purposes of calculating VOC emissions, the permit requires a tiered approach to determining VOC content in coatings and adhesives. The permit allows the coating or adhesive VOC content to be based on manufacturer formulation data as shown on the MSDS for each product if actual emissions are less than 50 percent of the limit value. If a range of VOC content values is given, calculations shall be based on the maximum value. If a monthly calculation of actual emissions indicates emissions at 50 percent or more of the allowable annual emissions, quarterly testing of each product formulation is required. The testing shall be determined, by either the permittee or supplier, using EPA Reference Method 24 (40 CFR 60, Appendix A). Each coating and adhesive shipment must be identified by a product formulation number that may be correlated to Reference Method 24 results. Emission calculations must be based on the most recent test results for each formulation. The quarterly tests may

be discontinued after actual annual emissions are below 50 percent of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each formulation be used in lieu of MSDS information.

Table 6 – Past Actual Annual VOC emissions from LAM1 and LAM4 (tons)

YEAR	LAM1	LAM4
2010	0.002	0.030
2009	0.002	0.033
2008	0.002	0.029
2007	0.002	0.025
2006	0.002	0.029

Compliance demonstration and monitoring requirements from Rule 4-32 were included in the Title V renewal permit. Such provisions include how to show compliance with the 3.8 lbs VOC/gal or alternative emission standard (from 9 VAC 5-40-4540 B and AQP-2). Rule 4-32 and AQP-2 also provide formulas for calculations values needed to demonstrate compliance with Rule 4-32, all of which were included in the Title V renewal permit. The following formula (from 9 VAC 5-40-4540 B and AQP-2) is given to calculate a coating formulation in terms of lbs VOC per gallon coating solids (lbs VOC/GCS):

$$F_{cs} = \frac{F_{clw}}{1 - F_{clw}/Dc}$$

Where:

- F_{cs} = VOC content of the coating in lb VOC/GCS
- F_{clw} = VOC content of the coating in lb VOC/GCLW
- Dc = Density of VOC used (lb VOC/gallon VOC) (note: use a volume-weighted average for multiple VOCs)

The same regulation provides a formula for calculating the required overall control efficiency for each laminator to meet the emission standard, as follows:

$$OE_{req} = \frac{F_{cs} - 7.9}{F_{cs}}$$

Where:

- F_{cs} = VOC content of coating in lbs VOC/gal coating solids, as defined in Condition 74
- OE_{req} = Overall control efficiency required (mass fraction)

The regulation also gives a formula for determining overall control efficiency where a control device is used, as follows:

$$OE = CE \times DRE$$

Where:

OE = Overall control efficiency (mass fraction)

CE = Collection efficiency of the capture device (lb VOC collected/lb VOC used)

DRE = Destruction or removal efficiency of the add-on control device

There is no monitoring for the visible emissions requirement. Laminating operations at O'Sullivan have historically produced no visible emissions. Operation of the laminators is not expected to result in visible emissions. The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for these units.

RTO1 is subject to CAM (40 CFR 64). Please see discussion of the RTO1 CAM Plan and associated requirements in the Painting Operations Monitoring section of this SOB.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. Recordkeeping requirements for RTO1 are included in the Title V permit, Section - Painting Operations Requirements. Compliance records for the laminators include:

- MSDS or VOC Data Sheet showing VOC content (pounds/gallon) of each adhesive, coating and solvent used;
- Results of EPA Reference Method 24 tests, if applicable;
- Monthly and annual use (in gallons) of each adhesive and coating for LAM1, LAM3 and LAM4;
- Monthly and annual VOC (in tons) retained in hazardous waste and laminator product(s) for LAM1, LAM3 and LAM4;
- Monthly and annual throughput (in tons) of VOC to LAM1;
- Monthly and annual VOC emissions (in tons) from each of LAM1, LAM3 and LAM4;
- Total hours that LAM3 vents to the atmosphere and total hours that it vents to the RTO (monthly and rolling 12-month);
- Test results verifying 95.0 percent capture efficiency for LAM3;
- Calculations of the volume-weighted average of coatings used, if applicable;
- Calculations showing the required overall control efficiency needed to achieve the lbs VOC/gal emission standard and calculations showing the overall control efficiency actually achieved for LAM3; and
- Documentation of monitoring required by the CAM Plan for LAM3

Testing

As mandated by Condition 13 of the 4/21/05 NSR permit, the operating permit requires that the facility be constructed to allow for emissions testing and monitoring upon reasonable notice. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The reporting required by 40 CFR 64 (CAM) has been carried forward with this permit renewal.

ROTOGRAVURE PRINTING OPERATIONS – Emission Unit ID LEMB

Limitations

The following limitations and requirements are derived from 40 CFR 63 Subpart KK (National Emission Standards for the Printing and Publishing Industry) as designated for product rotogravure printing.

- HAP emissions from the Lembo printer (LEMB) shall be limited to no more than four percent of the mass of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied for the month; and
- If a different compliance option under 40 CFR 63 Subpart KK is chosen in the future, a permit modification may be required.

40 CFR 63 Subpart KK imposes limits on organic HAP emissions from rotogravure printing while offering a variety of compliance options for doing so. Product rotogravure facilities such as O'Sullivan may comply through use of capture and control equipment, the substitution of non-HAP solvents for HAP, or a combination of these methods. Ten options for demonstrating compliance are delineated in 40 CFR 63.825 for product rotogravure facilities. O'Sullivan has chosen to comply with 40 CFR 63 Subpart KK by limiting emissions to four percent of the mass of materials applied, as specified in 40 CFR 63.825(b)(4). It should be noted that O'Sullivan may in the future choose to comply with 40 CFR 63 Subpart KK through use of any option given in 40 CFR 63.825. Such a change would require a modification of their minor NSR and Title V permits.

O'Sullivan is located in Winchester, a VOC Control Area, and is therefore subject to applicable RACT standards in 9 VAC 5 Chapter 40 of the VAC. The following requirements from 9 VAC 5 Chapter 40, Article 32 (Emission Standards for Vinyl Coating Application Systems (Rule 4-32)) are applicable to the LEMB:

- 9 VAC 5-40-4480 A and B and 9 VAC 5-40-4490, limiting VOC emissions from the printer to 3.8 lbs per gallon applied and listing control methods to achieve the emissions limit (e.g., use of waterborne or high-solids coatings, carbon adsorption, incineration, or other equivalent technology);
- 9 VAC 5-40-4540 C, specifying an alternative emission standard if the 3.8 lbs VOC/gal limit is not achieved through use of compliant coatings;
- 9 VAC 5-40-4540 B, clarifying that the emission standards apply either coating by coating or to the volume-weighted average of coatings where the coatings are used on a single unit and the coatings are the same type or perform the same function (averaging not to exceed 24 hours); and
- 9 VAC 5-40-4480 C, requiring that reasonable precautions be taken to minimize the discharge of emissions from cleaning and purging operations and specifying methods of minimization.

The following sections of the VAC were also determined to be applicable:

- 9 VAC 5-40-80 Standard for Visible Emissions

Monitoring

In accordance with 40 CFR 63 Subpart KK, the permit requires O'Sullivan to demonstrate compliance with the mass HAP percent limit by EPA Reference Method 311 testing, using the VOC content as determined by EPA Reference Method 24 testing, or use Certified Product Data Sheet information. Also included in the permit is a formula from 40 CFR 63 Subpart KK to be used to calculate the monthly average as-applied organic HAP content of all materials used on the LEMB, shown below.

$$H_L = \frac{\sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj}}{\sum_{i=1}^p M_i + \sum_{j=1}^q M_j}$$

Where:

- H_L = The monthly average as-applied organic HAP content of all solids-containing materials applied at less than 0.04 kg organic HAP per kg of material applied, in kg/kg
- M_i = The mass of ink or other material, i, applied in a month, in kg
- C_{hi} = The organic HAP content of ink or other solids-containing material, i, expressed as a weight-fraction, in kg/kg
- C_{hj} = The organic HAP content of solvent, j, expressed as a weight-fraction, in kg/kg
- M_j = The mass of solvent, thinner, reducer, diluent, or other non-solids containing material, j, applied in a month

40 CFR 63 Subpart KK also requires calculation of actual total HAP emissions from the rotogravure press each month, according to the following equation:

$$H = \sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj}$$

Where:

- H = The total monthly organic HAP applied, in kg
- M_i = The mass of ink or other material, i, applied in a month, in kg
- C_{hi} = The organic HAP content of ink or other solids-containing material, i, expressed as a weight-fraction, in kg/kg
- C_{hj} = The organic HAP content of solvent, j, expressed as a weight-fraction, in kg/kg
- M_j = The mass of solvent, thinner, reducer, diluent, or other non-solids containing material, j, applied in a month

The calculation assumes that the organic HAP emitted from the LEMB is equal to the organic HAP applied on the printer.

Compliance demonstration and monitoring requirements from Rule 4-32 were included in the Title V renewal permit. Such provisions include how to show compliance with the 3.8 lbs VOC/gal or alternative emission standard (from 9 VAC 5-40-4540 B and AQP-2). Rule 4-32 and AQP-2 also provide formulas for calculating values needed to demonstrate compliance with Rule 4-32, all of which were included in the Title V renewal permit. The following formula (from 9 VAC 5-40-4540 B and AQP-2) is given to calculate a coating formulation in terms of lbs VOC per gallon coating solids (lbs VOC/GCS):

$$F_{cs} = \frac{F_{clw}}{1 - F_{clw}/Dc}$$

Where:

- F_{cs} = VOC content of the coating in lb VOC/GCS
- F_{clw} = VOC content of the coating in lb VOC/GCLW
- Dc = Density of VOC used (lb VOC/gallon VOC) (note: use a volume-weighted average for multiple VOCs)

The permit requires O'Sullivan to inspect each LEMB stack weekly for visible emissions. If any visible emissions are present, a six-minute visible emissions evaluation (VEE) must be performed according to EPA Reference Method 9 (40 CFR Part 60, Appendix A). If during the six minutes any violations of the 20 percent opacity standard are noted, a one-hour VEE is required to demonstrate compliance with the standard. Timely corrective action is required if a violation is determined to have occurred. This will meet the periodic monitoring requirement for the visible emission limit included in the permit.

Emission unit LEMB is not subject to CAM requirements. The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for this unit.

Recordkeeping

The permit includes requirements for maintaining records of all data needed to show compliance with the permit. These records include:

- Annual throughput of each material applied on the LEMB, calculated monthly as the sum of each consecutive 12-month period;
- HAP content of each material applied;
- HAP emissions from the LEMB, calculated monthly as the sum of each consecutive 12-month period;
- Monthly average as-applied organic HAP content of all materials applied at the LEMB;
- Calculations showing the volume-weighted average of coatings used, if applicable;
- Calculations showing the VOC content of coatings in lbs VOC per gallon coating solids, if applicable; and
- Results of weekly stack inspections.

Testing

The permit requires the facility be constructed to allow for emissions testing at any time using appropriate methods, as required by 9 VAC 5-40-30. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The permit delineates reporting requirements from 40 CFR 63 Subpart KK. O'Sullivan is required to submit a semi-annual summary report (40 CFR 63.10(e)(3)(vii) and (viii)).

CALENDERING OPERATIONS – Emission Unit ID #s CAL1 - CAL3, CAL2RIBBONS, CALMIX1a, 1b, 2a, 2b1, 2b2, 3a, 3b, and 3c.

Limitations

The following limitations are State BACT requirements from the 3/5/12 NSR permit, for modification of Calender 2, which is included with this SOB as Attachment C.

- Condition 2, limiting visible emissions from Calender 2 (CAL2) to 20 percent opacity, except for one six-minute period in which visible emissions shall not exceed 30 percent opacity;
- Condition 3, limiting visible emissions from each fabric filter serving the Calender 2 pre-blenders (CALMIX 2b1 and 2b2) to five percent opacity;
- Condition 4, limiting visible emissions from the baghouse serving the Calender 2 ribbon grinder (CAL2RIBBONS) to five percent opacity;
- Condition 5, requiring that PM emissions from Calender 2 pre-blenders (CALMIX 2b1 and 2b2) be controlled by fabric filters;
- Condition 6, requiring that PM emissions from the Calender 2 Banbury mixer (CALMIX 2a) be controlled by a fabric filter;
- Condition 7, requiring that PM emissions from the Calender 2 ribbon grinder (CAL2RIBBONS) be controlled by a baghouse;
- Condition 10, limiting throughput of raw materials to Calender 2 (CAL2) to 24,000 tons per year;
- Condition 11, limiting PM and PM-10 emissions from Calender 2 pre-blenders (CALMIX 2b1 and 2b2) to 0.38 lbs/hr and 0.1.3 tons/yr;
- Condition 12, limiting PM and PM-10 emissions from the Calender 2 Banbury mixer (CALMIX 2a) to 0.56 lbs/hr and 1.9 tons/yr;
- Condition 13, limiting PM and PM-10 emissions from the Calender 2 ribbon grinder (CAL2RIBBONS) to 0.37 lbs/hr and 1.6 tons/yr; and
- Condition 14, limiting emissions from Calender 2 (CAL2) to 4.53 lbs/hr and 15.5 tons/yr PM/PM-10 and 8.38 lbs/hr and 28.6 tons/yr VOC.

The following limitations from the VAC for existing sources of air pollution were determined to be applicable.

- 9 VAC 5-40-80, limiting visible emissions from the calenders and calender mixing units, (CAL1 – CAL3 and CALMIX1a, 1b, 2a, 2b1, 2b2, 3a, 3b, and 3c) to 20 percent opacity, except for one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity;

- 9 VAC 5-40-260 C, limiting PM emissions from each calender (CAL1 – CAL3) and each calender mixing unit (CALMIX1a, 1b, 2a, 2b1, 2b2, 3a, 3b, and 3c) according to the following equation:

$$E = 4.10P^{0.67}$$

Where:

E = emission rate in lbs/hr

P = process weight rate in tons/hr

Monitoring

The monitoring requirements for Calender 2 (CAL2) in the 3/5/12 NSR permit were developed to meet Part 70 requirements.

To monitor compliance with the visible emissions limit, the permit requires O'Sullivan to perform weekly inspections of the stacks of the calenders (CAL1 – CAL3). If visible emissions are seen from the calender stacks, an EPA Reference Method 9 test shall be performed for at least six minutes. If any of the observations exceed the standard, the test shall continue until 60 minutes of observation are completed. If the test indicates a violation, corrective action shall be taken. Because the calender mixing units (CALMIX1a, 1b, 2a, 2b1, 2b2, 3a, 3b, and 3c) vent indoors, O'Sullivan is not required to monitor visible emissions until such time as they may be vented to the atmosphere. There is no documentation in DEQ files of visible emissions violations from the units. The permit requires O'Sullivan to take timely corrective action if visible emissions are noted. Therefore the weekly stack inspections will provide a reasonable assurance of compliance with the opacity limit and therefore meets periodic monitoring standards.

The calender mixing units (CALMIX1a, 1b, 2a, 2b1, 2b2, 3a, 3b, and 3c) upstream of each calender have a maximum capacity of at least 100 pounds (0.05 ton) per hour. Because the resin must be properly blended and mixed before it can be fed to the calenders, the mixing unit capacities effectively limit the input to each calender. Using as the calender mixing unit capacity, 0.05 ton per hour, as the feed rate to each calender, the allowable emission rate may be determined, based on the process weight rate formula in the permit:

$$E = 4.10P^{0.67}$$

Where:

E = emission rate in lbs/hr

P = process weight rate in tons/hr

Therefore:

$$E = 4.10 (0.05)^{0.67}$$

E = 0.551 lb PM/hr allowed for each calender at 100 lbs/hr feed rate

Using the emission factors derived from the June 2005 stack testing of Calender 2 (CAL2), a feed rate of 0.05 ton/hr to each calender, and no adjustment for controls, yields maximum actual emissions as follows:

Actual Emissions = (0.05 tons/hr) x (1.17 lbs PM/ton vinyl produced)

Actual Emissions = 0.058 lb PM/hr from each calender

The calculations demonstrate that the maximum emissions of each calender is well below the allowable level. It is reasonably assumed that the emissions limit will not be exceeded at the maximum feed rate to the calender lines.

Emission units CAL1 - CAL3, CAL2RIBBONS, CALMIX1a, 1b, 2a, 2b1, 2b2, 3a, 3b, and 3c are not subject to CAM requirements. The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for these units.

Recordkeeping

The permit requires O'Sullivan to maintain records necessary to demonstrate compliance. Recordkeeping requirements for Calender 2 from the 3/5/12 NSR permit were included in the Title V renewal permit. Such records include annual throughput processed by the calenders and mixers, the annual hours of operation of each unit, and records of the weekly stack inspection results and any subsequent corrective action.

Testing

The permit requires that the facility be constructed to allow for emissions testing at any time using appropriate methods, as required by 9 VAC 5-40-30. The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

MATERIALS HANDLING OPERATIONS – Emission Unit IDs RESCONV1 and RESCONV2

Limitations

The following limitations from the VAC for existing sources of air pollution were determined to be applicable.

- 9 VAC 5-40-80, limiting visible emissions from the resin conveyor stacks (RESCONV1 and RESCONV2) to 20 percent opacity, except for one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity;
- 9 VAC 5-40-260 C, limiting PM emissions from the resin conveyor stacks (RESCONV1 and RESCONV2) according to the following equation:

$$E = 4.10P^{0.67}$$

Where:

E = emission rate in lbs/hr

P = process weight rate in tons/hr

Additionally, a requirement to control PM emissions from the resin conveyor stacks (RESCONV1 and RESCONV2) using a fabric filter is included in the permit. The facility currently controls the mixing units with baghouses; including the control requirement in the permit simplifies monitoring required to demonstrate compliance with the PM emission limit for those units.

Monitoring

Based on the above formula and the maximum rated capacity of each resin conveyor (RESCONV1 and RESCONV2) of 10 tons/hr, the maximum allowable PM emission rate for each conveyor is

$$E = 4.10P^{0.67}$$

Where:

E = emission rate in lbs/hr

P = process weight rate in tons/hr

Therefore:

$$E = 4.10 (10)^{0.67}$$

$$E = 19.2 \text{ lb PM/hr}$$

O'Sullivan conservatively estimates that one percent of the material conveyed becomes airborne and is transferred to the baghouse. At the maximum capacity of 10 tons/hr, 200 lbs PM would be delivered to the filter, which, if operating properly, may be assumed to be 99.9 percent efficient for resin dust. Controlled emissions at the maximum capacity of the conveyors would therefore be 0.2 lbs PM/hr, well below the allowable level. Therefore, periodic monitoring to ensure proper baghouse performance would provide a reasonable assurance of compliance with the hourly PM limit.

The permit requires O'Sullivan to perform weekly inspections of the resin conveyor stacks to assess the presence of visible emissions. If visible emissions are seen from either stack, O'Sullivan will determine

the cause of the visible emissions and take corrective action until baghouse operation resumes with no visible emissions.

If a baghouse is operating properly, there should be no visible emissions from the unit. This is because the device eliminates particulates, which are the source of the visible emissions. Therefore, if visible emissions are seen from a baghouse stack, it can be reasonably assumed that there is a problem with the control device.

Visible emissions were selected as the indicator because they are indicative of good operation and maintenance of a baghouse. If the baghouse is not functioning properly, visible emissions will be present. Therefore, visible emissions are an acceptable performance indicator.

Emission units RECONV1 and RESCONV2 are not subject to CAM requirements. The weekly inspections satisfy the periodic monitoring requirement for particulate emissions from the resin conveyors.

Recordkeeping

The permit requires O'Sullivan to maintain records necessary to demonstrate compliance. Such records include annual throughput processed by the conveyors, the annual hours of operation of each unit, and records of the weekly stack inspection results and any subsequent correction.

Testing

The permit requires that the facility be constructed so as to allow for emissions testing at any time using appropriate methods, as required by 9 VAC 5-40-30. The permit does not require source tests. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

STORAGE TANK REQUIREMENTS – Emission Unit IDs TNK-P21 through TNK-P26 and TNK-TC61 through TNK-TC66

Limitations

O'Sullivan is located in a VOC control area and is therefore subject to applicable RACT standards in 9 VAC 5 Chapter 40 of the VAC. The following requirements from 9 VAC 5 Chapter 40, Article 25 (Emission Standards for Volatile Organic Compound Storage and Transfer Operations (Rule 4-25)) are applicable to the storage tanks:

- 9 VAC 5-40-3430 A, requiring control of at least 60 percent by weight VOC emissions during tank filling, and
- 9 VAC 5-40-3440 A.1, requiring that each storage tank be equipped with a submerged fill pipe.

The requirements apply only to tanks storing a VOC having a vapor pressure equal to or greater than 1.5 pounds per square inch absolute under actual storage or filling conditions. In the initial Title V permit, the storage tanks were subject to recordkeeping requirements from 40 CFR 60 Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after 7/23/84. However, Subpart Kb was amended 10/15/03, such that the recordkeeping requirements for tanks of the size of O'Sullivan's (less than 75 m³ (19,813 gallons) in capacity) were removed. Accordingly, the Subpart Kb recordkeeping requirements are no longer included in Title V permit.

Monitoring and Recordkeeping

Compliance demonstration and monitoring requirements from Rule 4-25 were included in the Title V renewal permit. Such provisions include requirements to keep a list identifying each VOC stored in each storage tank and the VOC's vapor pressure under absolute actual filling and storage conditions and to maintain on file certification of submerged fill pipe for each storage tank storing a VOC having a vapor pressure equal to or greater than 1.5 pounds per square inch absolute under actual storage or filling conditions.

Emission units TNK-P21 through TNK-P26 and TNK-TC61 through TNK-TC66 are not subject to CAM requirements. The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for these units.

HAZARDOUS AIR POLLUTANTS FROM PAPER AND OTHER WEB COATING – Emission unit IDs PL3, PL4, LAM1, LAM3, LAM4, and PEMB1

The following limitations and requirements are derived from 40 CFR 63 Subpart JJJJ (National Emission Standards for Hazardous Air Pollutants from Paper and Other Web Coating), which defines the “affected source” as the collection of all web coating lines at the facility. The Lembo printer (LEMB), although a web coating line, is not subject to Subpart JJJJ according to 40 CFR 63.3300(b) because it is already subject to 40 CFR 63 Subpart KK (NESHAP for Printing and Publishing). For O’Sullivan, the affected source is the group consisting of the paint lines (PL3 and PL4), the laminators (LAM1, LAM3, and LAM4), and the post embosser (PEMB1).

Limitations

The Title V renewal permit includes the following limitations and requirements, as they are applicable requirements in 40 CFR 63 Subpart JJJJ:

- organic HAP emissions shall be limited to four percent of the mass of coating materials applied each month, and
- operational requirements applicable to any add-on control equipment used to meet the emission standard, including the requirement to operate a thermal oxidizer with combustion temperature of at least the three-hour average temperature established during performance testing, and the requirement to develop a monitoring plan to track capture efficiency.

40 CFR 63 Subpart JJJJ imposes limits on organic HAP emissions from web coating operations while offering a variety of compliance options. Web coating operations may comply through use of capture and control equipment, the substitution of non-HAP solvents for HAP, or a combination of these methods. O’Sullivan has chosen to comply with 40 CFR 63 Subpart JJJJ by limiting emissions to four percent of the mass of materials applied, as specified in 40 CFR 63.3320(b)(2). O’Sullivan may in the future choose to comply with 40 CFR 63 Subpart JJJJ through use of any option given in 40 CFR 63.3320. Such a change would require a modification of the minor NSR and Title V permits.

Monitoring

40 CFR 63 Subpart JJJJ specifies monitoring requirements to facilitate proper operation and performance of any control equipment used to meet the emission standard. Such requirements include:

- combustion temperature data collection and averaging,
- a requirement to operate a thermal oxidizer at or above the temperature limit established in testing,
- temperature monitoring device and recorder performance criteria,
- quality assurance criteria for each continuous parameter monitoring system (CPMS),
- developing and implementing a plan to monitor capture efficiency, and
- developing and implementing a CPMS quality control program.

40 CFR 63 Subpart JJJJ specifies formulas to be used to monitor compliance with the emission standard. One such formula is for calculating the overall organic HAP control efficiency each month for each coating line routed to an oxidizer:

$$R = \frac{(E)(CE)}{100}$$

Where:

- R = Overall organic HAP control efficiency, percent
- E = Organic volatile matter control efficiency of the control device, percent
- CE = Organic volatile matter capture efficiency of the capture system, percent

Organic HAP emissions for each month from each coating line controlled by the RTO are to be calculated as follows:

$$H_e = (1 - R) \left(\sum_{i=1}^p C_{ahi} M_i \right) - M_{vret}$$

Where:

- H_e = Total monthly organic HAP emitted, lbs
- R = Overall organic HAP control efficiency, percent
- p = Number of different coating materials applied in a month
- C_{ahi} = Monthly average, as-applied, organic HAP content of coating material, i, expressed as a mass fraction, lb/lb
- M_i = Mass of as-purchased coating material, i, applied in a month, lbs
- M_{vret} = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, lbs. The value of this term will be zero in all cases except where the permittee chooses to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for compliance demonstration.

40 CFR 63 Subpart JJJJ also specifies a formula to be used to calculate organic HAP emissions from each uncontrolled coating line:

$$H_m = \sum_{i=1}^p C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} - M_{vret}$$

Where:

- H_m = Total monthly organic HAP applied, lbs
- p = Number of different coating materials applied in a month
- C_{hi} = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, lb/lb
- M_i = Mass of as-purchased coating material, i, applied in a month, lbs
- q = Number of different materials added to the coating material
- C_{hij} = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, lb/lb
- M_{ij} = Mass of material, j, added to as-purchased coating material, i, in a month, kg
- M_{vret} = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, lbs. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration

Subpart JJJJ further states that total organic HAP emissions for each month are to be determined by summing the organic HAP emissions determined, according to the above formulas, for each controlled and uncontrolled web coating line. Then, the permittee is required to determine the organic HAP

emission rate based on coating material applied (for direct comparison to the emission standard) by using the following formula:

$$S = \frac{H_{et}}{\sum_{i=1}^p M_i + \sum_{j=1}^q M_{ij}}$$

Where:

- S = Mass of organic HAP emitted per mass of material applied, lb/lb
- H_{et} = Total monthly organic HAP emitted, lbs
- p = Number of different coating materials applied in a month
- M_i = Mass of as-purchased coating material, i, applied in a month, lbs
- q = Number of different materials added to the coating material
- M_{ij} = Mass of material, j, added to as purchased coating material, i, in a month, lbs

40 CFR 63 Subpart JJJJ states that a source shall be considered to be in compliance with the emission standard for the month if all operating parameters required to be monitored were maintained at (or above, for temperature) the values established during performance testing and the total mass of organic HAP emitted by the web coating lines is no more than 0.04 lb organic HAP per lb coating applied.

Recordkeeping

The recordkeeping requirements from 40 CFR 63 Subpart JJJJ were incorporated into the O'Sullivan Title V renewal permit. Such records include:

- capture system parameter monitoring,
- CPMS data,
- the occurrence and duration of each SSM of a web coating line or control equipment,
- all required maintenance performed on air pollution control or monitoring devices,
- each period during which a CPMS is malfunctioning or inoperative,
- all required measurements needed to demonstrate compliance with 40 CFR 63 Subpart JJJJ,
- control device and capture system operating parameter data,
- overall control efficiency determination using capture efficiency and control device destruction efficiency,
- organic HAP content data for each material used,
- volatile matter and coating solids content data, if applicable, and
- material usage and organic HAP usage for the affected source

The specified monitoring and recordkeeping adequately address the periodic monitoring requirements for HAPs for these units.

Testing

In accordance with 40 CFR 63 Subpart JJJJ, the permit requires O'Sullivan to demonstrate the organic HAP mass fraction of each coating material, as purchased, by EPA Reference Method 311 testing, using the VOC content as determined by EPA Reference Method 24 testing, or use formulation data from the manufacturer. Also included in the permit is a formula from 40 CFR 63 Subpart JJJJ to be used to calculate the monthly average as-applied organic HAP content of all materials used on the web coating lines (if solvents are added to as-purchased materials before application), shown below.

$$C_{ahi} = \frac{C_{hi}M_i + \sum_{j=1}^q C_{hij}M_{ij}}{M_i + \sum_{j=1}^q M_{ij}}$$

Where:

- C_{ahi} = Monthly average, as-applied, organic HAP content of coating material, i, expressed as a mass fraction, lb/lb
 C_{hi} = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, lb/lb
 M_i = Mass of as-purchased coating material, i, applied in a month, lb
 q = Number of different materials added to the coating material
 C_{hij} = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, lb/lb
 M_{ij} = Mass of material, j, added to as-purchased coating material, i, in a month, lb
 M_i = Mass of as-purchased coating material, i, applied in a month, lb

Formulas are also provided for calculating the as-applied volatile organic content and the as-applied solids content of a coating, if applicable. Finally, the permit includes the requirement to develop a test protocol and conduct testing to determine the mass of volatile matter retained in the web substrate, if such retention is considered in showing compliance with the emission standard.

Reporting

The permit includes all reporting requirements from 40 CFR 63 Subpart JJJJ, including those incorporated into Subpart JJJJ from the Part 63 General Provisions (40 CFR 63 Subpart A). The reporting requirements include:

- semi-annual compliance report, and
- notification of date of required performance test, at least 60 days in advance

HAZARDOUS AIR POLLUTANTS FROM ORGANIC LIQUIDS DISTRIBUTION (Facility-wide)

O'Sullivan's facility includes equipment meeting the definition of affected source under 40 CFR 63 Subpart EEEE (National Emission Standards for Hazardous Air Pollutants from Organic Liquids Distribution) (OLD MACT), which was promulgated 2/3/04. According to 40 CFR 63.2338(b), the affected source is the collection of activities and equipment used to distribute organic liquids into, out of, or within the facility and is composed of: storage tanks storing organic liquids, transfer racks at which organic liquids are loaded into or unloaded out of transport vehicles or containers, equipment leak components in organic liquid service associated with pipelines (except as provided in 40 CFR 63.2338(c)(2)), storage tanks, and transfer racks, and transport vehicles while loading or unloading organic liquids at transfer racks. The OLD MACT requirements have an effective date of 2/3/07. However, based on the vapor pressure of the organic liquids stored in O'Sullivan's storage tanks and the fact that O'Sullivan loads organic liquids only from trucks into storage tanks (and not from the tanks into trucks), there are no requirements from the MACT that apply to the units, except the Initial Notification Requirement (40 CFR 63.7545) and the obligation to submit periodic compliance reports (40 CFR 63.2386). In a letter dated 12/13/04, O'Sullivan provided the initial notification for applicability of the OLD MACT and requested an applicability determination on several detailed aspects of the rule. In response to O'Sullivan's letter, DEQ developed a preliminary applicability determination and forwarded its determination to EPA Region III for its concurrence (see letter from Sharon G. Foley to Helene Drago, 2/9/05), given the potential national implications of a MACT determination and the fact that O'Sullivan has other facilities outside of Virginia. In a letter dated 11/10/05, EPA Region III concurred with DEQ's applicability determination. Attachment E includes the correspondence from O'Sullivan, DEQ, and EPA Region III relating to the OLD MACT applicability determination.

On 11/14/05, EPA proposed amendments to the OLD MACT, including changes to the definitions of organic liquid loading volume and transfer rack, changes to storage tank and transfer rack control requirements, and changes to notification, recordkeeping, and reporting requirements. In January 2006, O'Sullivan reviewed the proposed rule changes and found that its operations would not trigger any of the revised control or work practice standards. DEQ concurred with O'Sullivan's determination. The 7/1/06 Title V permit included the compliance reporting requirement from the promulgated rule, which became final on 7/28/06.

On 4/23/08, EPA took direct final action on OLD MACT in which EPA is clarified combustion control device compliance requirements, certain storage tank control compliance dates, vapor balance system monitoring requirements, and corrected typographical errors found in the 7/28/06, final rule amendments. These changes have no effect on the previous applicability determinations discussed above.

On 7/17/08, in response to public comment on the 4/23/08 direct final rule, the EPA amended the OLD MACT, but the changes were limited to the compliance items associated with the 4/23/08 direct final rule. Again, these changes have no effect on the previous applicability determinations discussed above.

A condition is included in the Title V renewal permit indicating that the units are subject to the regulation. However, under O'Sullivan's current operating conditions, the only OLD MACT requirement is submission of periodic compliance reports.

HAZARDOUS AIR POLLUTANTS FROM INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL BOILERS AND PROCESS HEATERS - MACT Subpart DDDDD

O'Sullivan is subject to 40 CFR Part 63, Subpart DDDDD (Major Source Boiler MACT). The Major Source Boiler MACT was to become effective on 5/20/11. On 5/18/11, however, the EPA published a notice in the Federal Register delaying the effective dates of the Major Source Boiler MACT. In the notice of delay, the EPA stated that it was in the process of developing a proposed reconsideration of certain aspects of the rule. The EPA proposed reconsideration of the rule in December 2011 and currently intends to finalize the reconsideration in the spring of 2012.

On 1/9/12, the federal district court for the District of Columbia issued a decision vacating and remanding the 5/18/11, Delay Notice. The vacatur, in conjunction with the proposed reconsideration of the Major Source Boiler MACT, has created uncertainty regarding requirements because the EPA has proposed revisions to the compliance dates (the date by which a unit must be in compliance with the requirements in the Boiler MACT rule) for all units and to the subcategories for some units. Since the EPA intends to issue a final action on reconsideration of the Major Source Boiler MACT in the spring of this year, it makes sense to wait to include all applicable requirements in the Title V permit until after the final rule is issued. Please note that, on 2/7/12, EPA provided a no action assurance to all owners and/or operators of industrial boilers with respect to the notification deadlines.

For the reasons discussed above, "place holder" language has been established in the Title V permit pursuant to requirements contained in the Major Source Boiler MACT.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

With this renewal, a number of insignificant emission units (PPLSH, SLTBLK, APNCT, PPRMV, FBCRSH, BRCHRG, WCHL, CMPRS, DDTBL, SPRSC, ABLST, ORCYCL, HO33, P34, P35, HO36, TNK-FO33, TNK-K42, LP-1, LP-2, LP-3, T-1 through T-13, VAC2, VAC3, and PRDLB) were added to the permit and two previously listed solvent storage tanks (TNK-G13b and TNK-TC15) were removed. Emission estimates for units qualifying as insignificant based on 9 VAC 5-80-720 B (less than 5 tpy criteria and 0.5 tpy HAP emissions) were provided as additional application information received by DEQ on 10/7/11.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation ¹	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
PHTR4	Natural-gas-fired burner, Lembo oven	9 VAC 5-80-720 C		2.4 MMBtu/hr
PHTR5	Natural-gas-fired burner, Laminator 3 oven	9 VAC 5-80-720 C		1.2 MMBtu/hr
PHTR6 – 9	(4) natural-gas-fired burners, Paint Line 3 oven Zones 1 – 4	9 VAC 5-80-720 C		2.0 MMBtu/hr each
PHTR10	Natural-gas-fired burner, Paint Line 3 oven preheat	9 VAC 5-80-720 C		0.8 MMBtu/hr
PHTR12-15	(4) natural-gas-fired burners, Paint Line 4 oven Zones 1 – 4	9 VAC 5-80-720 C		2.0 MMBtu/hr each
PHTR11	Natural-gas-fired burner, Paint Line 4 oven preheat	9 VAC 5-80-720 C		0.8 MMBtu/hr
ICENG1	Gas IC engine powered equipment (portable cement mixer, two portable welders, saw, port. generator, etc.)	9 VAC 5-80-720 C		~ < 20 HP
PPLSH	Press polish (presses)	9 VAC 5-80-720 B	VOC	N/A
SLTBLK	Slitter and blanker operations	9 VAC 5-80-720 A	PM	N/A
CLNR1-3	Three parts cleaners	9 VAC 5-80-720 B	VOC	N/A
HWC1	Hazardous waste compactor	9 VAC 5-80-720 B	VOC, HAPs	N/A
APNCT	Two aerosol can puncturing systems	9 VAC 5-80-720 B	VOC, HAPs	N/A
PPRMV	One propane can pin remover	9 VAC 5-80-720 B	VOC, HAPs	N/A
FBCRSH	One fluorescent bulb crusher	9 VAC 5-80-720 B	PM, HAPs	N/A
BRCHRG	Battery recharge areas	9 VAC 5-80-720 A	N/A	N/A

Emission Unit No.	Emission Unit Description	Citation¹	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
WCHL	Five water chillers	9 VAC 5-80-720 A	N/A	N/A
CMPRS	Eight air compressors	9 VAC 5-80-720 A	N/A	N/A
DDTBL	Micro air draw down tables (dry mix areas)	9 VAC 5-80-720 B	PM	5HP
SPRCS	Two super sac weigh hoppers	9 VAC 5-80-720 B	PM	800 cfm
ABLST	Abrasive blast system (embossing roll cleaning) three portable, one stationary	9 VAC 5-80-720 B	PM	72 cfm @ 100 psi
ORCYCL	150 oil recycling unit (two 275 gallon tanks)	9 VAC 5-80-720 B	VOC	Two 275 gal
TNK-P1	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	10,000 gal
TNK-P2	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	10,000 gal
TNK-P3	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	11,732 gal
TNK-P4N	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	7614 gal
TNK-P4S	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	7614 gal
TNK-P5	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	14,500 gal
TNK-P8	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	7500 gal
TNK-P9	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	9964 gal
TNK-G13a	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	250 gal
TNK-TC14	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	8000 gal
TNK-P16	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	8000 gal
TNK-P17	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC	8000 gal
TNK-TC18	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	10,000 gal
TNK-TC19	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	10,000 gal
TNK-P30	Storage tank, plasticizer	9 VAC 5-80-720 B	VOC	275 gal
TNK-S31	Storage tank, plasticizer	9 VAC 5-80-720 B	VOC	8000 gal
TNK-S32	Storage tank, stabilizer	9 VAC 5-80-720 B	VOC	8000 gal
TNK-HO41b	Storage tank, hot oil expansion	9 VAC 5-80-720 B	VOC	275 gal
HO33	Storage tank, oil	9 VAC 5-80-720 B	VOC	275 gal
HO36	Storage tank, oil	9 VAC 5-80-720 B	VOC	275 gal
P34	Storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAP	275 gal
P35	Storage tank, plasticizer	9 VAC 5-80-720 B	VOC	275 gal

Emission Unit No.	Emission Unit Description	Citation¹	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
TNK-FO27	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC	275 gal
TNK-FO28A	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC	275 gal
TNK-FO28B	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC	275 gal
TNK-FO29	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC	275 gal
TNK-FO1	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC	14,100 gal
TNK-FO2	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC	14,933 gal
TNK-FO3	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC	19,108 gal
TNK-FO4	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC	19,391 gal
TNK-FO33	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC	15,000 gal
TNK-FO40	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC	275 gal
TNK-FO60	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC	250 gal
TNK-K42	Storage tank, kerosene	9 VAC 5-80-720 B	VOC	250 gal
TNK-V43	Storage tank, Varsol	9 VAC 5-80-720 B	VOC	275 gal
LP-1	Storage tank, propane	9 VAC 5-80-720 B	VOC	500 gal
LP-2	Storage tank, propane	9 VAC 5-80-720 B	VOC	500 gal
LP-3	Storage tank, propane	9 VAC 5-80-720 B	VOC	1000 gal
T-1 through T-13	Storage tank, transformers	9 VAC 5-80-720 B	VOC	500 gal each
VAC1	Large portable vacuum cleaners	9 VAC 5-80-720 B	PM, PM-10	N/A
VAC2	Central vacuum system (CAL3)	9 VAC 5-80-720 B	PM, PM-10	30 HP, 1300 cfm
VAC3	Central vacuum system (CAL2)	9 VAC 5-80-720 B	PM, PM-10	625 cfm
CROTRT1	Corona treaters, laminators	9 VAC 5-80-720 A	Ozone (as VOC)	See emission unit
CROTRT2	Corona treaters, paint lines	9 VAC 5-80-720 A	Ozone (as VOC)	See emission unit
CROTRT3	Corona treaters, post embosser	9 VAC 5-80-720 A	Ozone (as VOC)	See emission unit
CROTRT4	Corona treaters, calenders	9 VAC 5-80-720 A	Ozone (as VOC)	See emission unit
RCYCL1	Vinyl recycling systems	9 VAC 5-80-720 A	PM, PM-10	N/A
R & D -001	Research and Development building (R & D is not the primary function of the facility but rather serves as a support function)	9 VAC 5-80-720 A	N/A	N/A
PRDLB	Production lab (support to calender production areas: four small mills, one small banbury, R/D ovens)	9 VAC 5-80-720 A	N/A	N/A

- The citation criteria for insignificant activities are as follows:
 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
 9 VAC 5-80-720 B - Insignificant due to emission levels
 9 VAC 5-80-720 C - Insignificant due to size or production rate

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets. The General Conditions section has been updated to reflect the current Title V permit boilerplate.

STATE-ONLY ENFORCEABLE REQUIREMENTS

The Title V permit includes state-only enforceable requirements which limit the facility-wide Bis(2-ethylhexyl) phthalate (DEHP) emissions to 20 tons/yr and DEHP emissions from each individual calendar (CAL1, CAL2 and CAL 3) to 4.52 lbs/hr and 12.88 tons/yr.

INAPPLICABLE REQUIREMENTS

The following regulations were identified by the permittee as inapplicable:

- 40 CFR 60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units): O'Sullivan's boilers were installed prior to June 9, 1989 or are rated less than 10 MMBtu/hr, and are therefore not subject to the standard. Also, the standard does not apply to process heaters, so the Calender 3 hot oil generator is not subject to it.
- 40 CFR 60 Subpart FFF (Standards of Performance for Flexible Vinyl and Urethane Coating and Printing): Applies to rotogravure printing operations installed, modified, or reconstructed after January 18, 1983; O'Sullivan's rotogravure press was installed before the effective date and has not been modified or reconstructed so as to trigger applicability.
- 40 CFR 60 Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels): Applies to VOC storage tanks having capacities greater than or equal to 75 m³ (19,813 gallons); O'Sullivan's tanks are below the applicability threshold.
- 9 VAC 5 Chapter 40, Part II, Article 36 (Emission Standards for Flexographic, Packaging Rotogravure, and Publication Rotogravure Printing Lines (Rule 4-36)): O'Sullivan's rotogravure press (LEMB) is neither a packaging nor a publication rotogravure unit, so is not subject to Rule 4-36.
- 40 CFR 63 Subpart HHHHH (National Emission Standards for Hazardous Air Pollutants for Miscellaneous Coating Manufacturing): O'Sullivan's coating mixing operations are "affiliated operations" under 40 CFR 63 Subpart JJJJ (POWC MACT) or 40 CFR 63 Subpart KK (Printing and Publishing MACT) and are therefore exempt from Subpart HHHHH.
- 40 CFR 51 Subpart P (Protection of Visibility): O'Sullivan is not a "BART-eligible source" because the plant operations are not one of the 26 listed existing stationary source facility categories defined at 40 CFR 51.301.
- 9 VAC 5 Chapter 140, Part I (NOx Budget Trading Program): O'Sullivan's combined fuel combustion equipment capacity is less than 250 MMBtu/hr and therefore O'Sullivan does not meet the definition of "NOx Budget Unit" or "NOx Budget Source" and is therefore not subject to the rule.
- 40 CFR 98 (Mandatory Greenhouse Gas Reporting): The provisions of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting require owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO₂e or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of "applicable requirement" in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

However, as a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after 1/1/11. The current state minor NSR (or PSD) permit for O'Sullivan's facility contains no GHG-specific applicable requirements and there

have been no modifications at the facility requiring a PSD permit. Therefore, there are no applicable requirements for the facility specific to GHG.

CONFIDENTIAL INFORMATION

As with previous Title V application requests, O'Sullivan again requested confidentiality for the rated capacity of certain pieces of equipment. O'Sullivan submitted both a confidential copy and a public copy of its application, accompanied by a showing justifying confidential treatment of the application. The capacity values of the applicable pieces of equipment, except for the calender equipment, are not included in the permit Section - Emission Units table. For the calender units, the capacity values are shown as "≥100 pounds/hr", as this is the applicability threshold of 9 VAC 5 Chapter 40, Article 4 - Emission Standards for General Process Operations.

PUBLIC PARTICIPATION

A public notice for the draft permit was published in the Winchester Star newspaper on October 25, 2012. The public comment period ended 30 days later on November 26, 2012. The draft and supporting documentation were available for public review during the public comment period. No comments were received by DEQ during the public notice period.

Concurrently with the public notice, the proposed permit was provided to U.S. EPA Region III for its review and comment. EPA's 45-day review period began October 24, 2012 and ended December 10, 2012. EPA did not comment on the draft permit.

ATTACHMENTS

- A: 2011 Annual Emissions Update
- B: 4/21/05 NSR permit
- C: 3/5/12 NSR permit
- D: CAM Plan rationales and 2001 and 2006 SOB CAM Plan evaluations
- E: Correspondence related to OLD MACT applicability determination

ATTACHMENT A:
2011 ANNUAL EMISSIONS STATEMENT



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2011 EMISSION STATEMENT

DEQ VALLEY

APR 13 2012

To: _____
Date: _____

Please correct any errors in the information below (cross out & replace)

FACILITY NAME O'SULLIVAN FILMS INC	REGISTRATION # 80333	CONTACT PERSON KEVIN BURKETT	
LOCATION ADDRESS 1944 VALLEY AVENUE, WINCHESTER, VA 22601		JURISDICTION WINCHESTER CITY	
MAILING ADDRESS 1944 VALLEY AVENUE	MAILING CITY AND STATE WINCHESTER, VA	ZIPCODE 22601	
OWNER NAME O'Sullivan Films Inc	TELEPHONE NUMBER (540) 667-6666 EXT 274	PRIMARY NAICS CODE 326113	For Agency Use Only E, 15

FACILITY TOTALS (Sum emissions from attached pages)

	ANNUAL		OZONE SEASON	
TOTAL VOC EMISSIONS FOR 2011	54.01	TONS/YR	NA	LBS/DAY
TOTAL NO _x EMISSIONS FOR 2011	7.52	TONS/YR	NA	LBS/DAY
TOTAL SO ₂ EMISSIONS FOR 2011	0.04	TONS/YR	NA	
TOTAL PM ₁₀ EMISSIONS FOR 2010	17.02	TONS/YR	NA	
TOTAL PB EMISSIONS FOR 2011	.00004	TONS/YR	NA	
¹ TOTAL TRS EMISSIONS FOR 2011	NA	TONS/YR	NA	
TOTAL TNMOC EMISSIONS FOR 2011 (landfills only)	NA	TONS/YR	NA	
TOTAL non-VOC/non-PM HAP EMISSIONS FOR 2011	NA	TONS/YR	NA	
TOTAL CO EMISSIONS FOR 2011	6.49	TONS/YR	NA	
TOTAL PM _{2.5} EMISSIONS FOR 2011	0.49	TONS/YR	NA	
TOTAL NH3 EMISSIONS FOR 2011	0.29	TONS/YR	NA	

PLEASE ATTACH "ANNUAL UPDATE" FORM.

PLEASE ATTACH "EMISSION STATEMENT CERTIFICATION" with appropriate signature.

ATTACHMENT B:
4/21/05 AS AMENDED 3/28/06, 12/30/08, 12/6/11 NSR PERMIT



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

This permit includes designated equipment subject to National Emission Standards for Hazardous Air Pollutants for Source Categories.

This permit replaces your permit dated April 21, 2005, as amended March 28, 2006, and December 30, 2008.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

O'Sullivan Films, Inc.
1944 Valley Avenue
Winchester, Virginia 22601
Registration No.: 80333
Plant ID No.: 51-840-0060

is authorized to modify and operate

a performance polymer and engineered film calendering, coating, and printing facility

located at

1944 Valley Avenue
Winchester

in accordance with the Conditions of this permit.

Approved on: April 21, 2005

Amended on: March 28, 2006

Amended on: December 30, 2008

Amended on: 12/6/11

Deputy Regional Director, Valley Region

Permit consists of 12 pages.
Permit Conditions 1 to 35.

INTRODUCTION

This permit approval is based on the permit applications dated January 27, 1996, August 29, 2003, February 8, 2005, January 10, 2008, and November 3, 2011 including amendment information dated July 12, September 17, and November 25, 1996, October 13, 1997, February 25, April 3, April 9, April 14, and June 16, 1998, July 9, August 30, September 15, November 3, and December 17, 1999, October 17, 2000, March 11 and May 14, 2002, and May 9, August 29, and December 9, 2003, March 18, 2004, and March 2, 2006. Any changes in the permit application specifications or any existing facilities that alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-10 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

PROCESS REQUIREMENTS

1. **Equipment List** – Equipment at this facility consists of the following:

Equipment installed prior to the date of this permit		
Equipment Description	Rated Capacity	Federal Requirements
Laminator 1 (LAM1)	---	40 CFR 63, Subpart JJJJ
Laminator 3 (LAM3)	20 m vinyl/min	40 CFR 63, Subpart JJJJ
Laminator 4 (LAM4)	20 m vinyl/min	40 CFR 63, Subpart JJJJ
Paint Line 3 (PL3)	---	---
Paint Line 4 (PL4)	5000 linear ft vinyl/hr	40 CFR 63, Subpart JJJJ
Paint Kitchen (PK)	---	---
Paint Laboratory (PLAB)	---	---
American Hydrotherm 1966 Hot Oil Generator (PH1)	16.8 MMBtu/hr	---

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.
(9 VAC 5-80-1180 D 3)

2. **Emission Controls: Laminator 1** – Volatile Organic Compound (VOC) emissions from Laminator 1 (LAM1) shall be controlled by use of waterborne coatings only, as defined in EPA Method 24 (40 CFR 60, Appendix A).
(9 VAC 5-80-1180)
3. **Emission Controls: Laminator 3** – VOC emissions from Laminator 3 (LAM3) shall be controlled by a 95 percent efficient capture system and a regenerative thermal oxidizer (RTO). The RTO shall be provided with adequate access for inspection and shall be in operation when the Laminator 3 (LAM3) is operating.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
4. **Emission Controls: Paint Line 3** – VOC emissions from Paint Line 3 (PL3) shall be controlled by an 80 percent efficient capture system and a RTO. The RTO shall be provided with adequate access for inspection and shall be in operation when Paint Line 3 (PL3) is operating.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
5. **Emission Controls: Paint Line 4** – VOC emissions from Paint Line 4 (PL4) shall be controlled by a permanent total enclosure and a RTO. The RTO shall be provided with adequate access for inspection and shall be in operation when Paint Line 4 (PL4) is operating.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

6. **Emission Controls: Paint Kitchen** – VOC emissions from the Paint Kitchen (PK) shall be controlled by a permanent total enclosure and a RTO having a control efficiency of at least 95.0 percent. The RTO shall be provided with adequate access for inspection and shall be in operation when the Paint Kitchen (PK) is operating.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
7. **Control Efficiency: RTO 1** - The RTO serving Paint Line 3 (PL3) and Laminator 3 (LAM3), shall maintain a control efficiency for VOC of no less than 95.0 percent on a mass basis.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
8. **Control Efficiency: RTO 2** - The RTO serving Paint Line 4 (PL4) shall maintain a control efficiency for VOC of no less than 98.6 percent on a mass basis.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
9. **Total Enclosure** - The total enclosure shall meet the following criteria:
 - a. Any natural draft openings shall be at least 4 equivalent opening diameters from each VOC emitting point;
 - b. The total area of all natural draft openings shall not exceed five percent of the surface area of the enclosure's four walls, floor and ceiling;
 - c. The average facial velocity of air through the natural draft openings shall be at least 200 feet per minute and the direction of flow shall be into the enclosure;
 - d. All access doors and windows shall be closed during routine operation of the paint lines;
 - e. All of the exhaust gases from the enclosure shall be directed to the thermal incinerator.
(9 VAC 5-50-260 and 9 VAC 5-80-1180)
10. **Control Parameters: RTO 1** - The RTO controlling Paint Line 3 (PL3) and Laminator 3 (LAM3) shall maintain the combustion zone temperature determined during the most recent performance test in which 95.0 percent VOC control efficiency was achieved and a residence time of at least 0.5 seconds. The combustion zone temperature shall be calculated as a three-hour average as specified in Condition 26.m.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
11. **Control Parameters: RTO 2** - The RTO controlling Paint Line 4 (PL4) shall maintain the combustion zone temperature determined during the most recent performance test in which 98.6 percent VOC control efficiency was achieved and a residence time of at least 1.0 second. The combustion zone temperature shall be calculated as a three-hour average as specified in Condition 26.m.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

12. **Monitoring Devices: RTOs** – Each RTO shall be equipped with devices to continuously measure and record oxidizer chamber temperature. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the RTO is operating.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

13. **Test/Monitoring Ports** - The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. This includes constructing the facility such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing a stack or duct that is free from cyclonic flow. Test ports shall be provided when requested at the appropriate locations.
(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

14. **Emissions Calculation** - Annual VOC emissions shall be calculated by mass balance as specified by the formula below:

$$V_{EM} = (V_{TPUT} - V_{REC} - V_{RET}) \times (1 - OCE)$$

$$V_{EM} = \text{Annual emissions of VOCs in tons.}$$

$$V_{TPUT} = \text{Annual throughput of VOCs in tons.}$$

$$V_{REC} = \text{Annual amount of VOCs recovered or disposed of off-site in tons, calculated as off-site disposal * wastestream solvent percentage.}$$

$$V_{RET} = \text{Annual amount of VOCs retained in the products in tons, calculated as product weight * solvent retention percentage.}$$

$$OCE = \text{overall control efficiency (the product of capture efficiency and control device destruction efficiency), expressed as a mass fraction}$$

Annual emissions shall be calculated monthly as the sum of each consecutive 12 month period.
(9 VAC 5-80-1180)

OPERATING/EMISSION LIMITATIONS

15. **Operating Hours: Paint Line 4** – Paint Line 4 (PL4) shall operate no more than 7,140 hours per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180)
16. **Fuel: Hot Oil Generator** - The approved fuels for the American Hydrotherm 1966 Hot Oil Generator (PH1) are natural gas and distillate oil. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-1180)
17. **Fuel: RTOs** - The approved fuels for combustion in the RTOs are natural gas and distillate oil. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-1180)
18. **Fuel Specifications** - The fuel shall meet the specifications below:

DISTILLATE OIL which meets the ASTM D396 specifications for numbers 1 or 2 fuel oil:
Maximum sulfur content per shipment: 0.5 percent
(9 VAC 5-80-1180)
19. **Fuel Certification** - The permittee shall obtain a certification from the fuel supplier with each shipment of distillate oil. Each fuel supplier certification shall include the following:
- a. The name of the fuel supplier;
 - b. The date on which the distillate oil was received;
 - c. The volume of distillate oil delivered in the shipment; and
 - d. The sulfur content of the distillate oil.
- (9 VAC 5-80-1180)
20. **Throughput: Laminator 1** – The throughput of VOC to Laminator 1 (LAM1) shall not exceed 9.8 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180)

21. **Emission Limits: Hot Oil Generator** - Emissions from the operation of the American Hydrotherm 1966 Hot Oil Generator (PH1) shall not exceed the limits specified below:

PM-10	0.13 lbs/hr	0.56 tons/yr
Sulfur Dioxide	8.74 lbs/hr	38.29 tons/yr
Carbon Monoxide	1.41 lbs/hr	6.18 tons/yr
Nitrogen Dioxide	2.43 lbs/hr	10.66 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition 26.c.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

22. **Emission Limits** - VOC emissions shall not exceed the limits specified below:

Paint Line 3 and Paint Kitchen	998 tpy
Paint Line 4	39 tpy
Paint Laboratory	30 tpy
Laminator 1	9.8 tpy
Laminator 3	100 tpy
Laminator 4	100 tpy

Compliance shall be demonstrated by mass balance as specified in Condition 14, performed monthly for each consecutive 12-month period. Compliance with these emission limits may be determined as stated in Condition 26.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

23. **Visible Emission Limit: Hot Oil Generator** - Visible emissions from the American Hydrotherm 1966 Hot Oil Generator (PH1) shall not exceed 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR Part 60, Appendix A).

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

24. **Visible Emission Limit: RTOs** - Visible emissions from each RTO shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR Part 60, Appendix A). (9 VAC 5-80-1180 and 9 VAC 5-50-260)
25. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirement, the MACT equipment as described in Condition 1 shall be operated in compliance with the requirements of 40 CFR 63, Subpart JJJJ. (9 VAC 5-80-1180, 9 VAC 5-60-90 and 9 VAC 5-60-100)

RECORDS

26. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. Records shall include, but are not limited to:
- a. Monthly and annual hours of operation for Paint Line 4 (PL4). Annual operating hours shall be calculated monthly as the sum of each consecutive 12-month period;
 - b. Monthly and annual throughput of natural gas and distillate oil. Annual throughput shall be calculated monthly as the sum of each consecutive 12-month period;
 - c. Monthly emissions calculations for emissions from the American Hydrotherm Hot Oil Generator (PH1) stack using calculation methods approved by the DEQ, to verify compliance with the ton/yr emissions limitations in Condition 21. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period;
 - d. All fuel supplier certifications;
 - e. VOC content (pounds/gallon) of each coating, paint, and adhesive used;
 - f. Monthly and annual use (in gallons) of each paint for Paint Lines 3 and 4 (PL3 and PL4). Annual use shall be calculated as the sum of each consecutive 12 month period;
 - g. Monthly and annual use (in gallons) of each paint for the Paint Laboratory (PLAB). Annual use shall be calculated as the sum of each consecutive 12 month period;
 - h. Monthly and annual use (in gallons) of each adhesive and coating for Laminators 1, 3 and 4 (LAM1, LAM3 and LAM4). Annual use shall be calculated as the sum of each consecutive 12 month period;
 - i. Monthly and annual throughput (in tons) of VOC to Laminator 1 (LAM1). Annual throughput shall be calculated as the sum of each consecutive 12-month period;
 - j. Monthly and annual VOC (in tons) retained in the recovered coatings and products for Paint Lines 3 and 4 (PL3 and PL4). Annual mass of compounds retained shall be calculated as the sum of each consecutive 12 month period;

- k. Monthly and annual VOC (in tons) retained in hazardous waste and laminator products for Laminators 1, 3 and 4 (LAM1, LAM3 and LAM4). Annual mass of compounds retained shall be calculated as the sum of each consecutive 12 month period;
- l. Monthly and annual VOC emissions (in tons) from Paint Lines 3 and 4 (PL3 and PL4), the Paint Kitchen (PK), the Paint Laboratory (PLAB), and Laminators 1, 3 and 4 (LAM1, LAM3 and LAM4). Annual emissions shall be calculated as the sum of each consecutive 12 month period;
- m. Average combustion zone temperature (during actual painting or laminating operations and when the paint kitchen is operating and exhausted to the RTO) of the RTO serving Paint Line 3 (PL3) and Laminator 3 (LAM3), calculated hourly as an average of the temperatures during the previous three hours;
- n. Monthly records of any three-hour period (during actual painting or laminating operations and when the paint kitchen is operating and exhausted to the RTO) during which the average combustion zone temperature of the RTO serving Paint Line 3 (PL3) and Laminator 3 (LAM3) is below the combustion zone temperature determined during the most recent performance test in which 95.0 percent VOC control efficiency was achieved and the total hours of RTO operation;
- o. Average combustion zone temperature (during actual painting operations and when the paint kitchen is operating and exhausted to the RTO) of the RTO serving Paint Line 4 (PL4), calculated hourly as an average of the temperatures during the previous three hours;
- p. Monthly records of any three-hour period (during actual painting operations and when the paint kitchen is operating and exhausted to the RTO) during which the average combustion zone temperature of the RTO serving Paint Line 4 (PL4) is below the combustion zone temperature determined during the most recent performance test in which 98.6 percent VOC control efficiency was achieved and the total hours of RTO operation;
- q. For each RTO, acquisition read outs showing the combustion zone temperature;
- r. Test results verifying the 95 percent capture efficiency required for Laminator 3 (LAM3) by Condition 3; and
- s. Records of bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment as required in Condition 32.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-1180 and 9 VAC 5-50-50)

27. **Reports - RTO** - Written reports shall be submitted semi-annually to the DEQ, showing:
- a. For the RTO serving Paint Line 3 (PL3) and Laminator 3 (LAM3) any three-hour period (during actual painting or laminating operations and when the paint kitchen is operating and exhausted to the RTO) during which the average combustion zone temperature is below the combustion zone temperature determined during the most recent performance test in which 95.0 percent control efficiency was achieved and the total hours of RTO operation;
 - b. For the RTO serving Paint Line 4 (PL4), any three-hour period (during actual painting operations and when the paint kitchen is operating and exhausted to the RTO) during which the average combustion zone temperature is below the combustion zone temperature determined during the most recent performance test in which 98.6 percent control efficiency was achieved and the total hours of RTO operation.

The submission of semi-annual reports may be discontinued at any time upon written notification from the DEQ.
(9 VAC 5-50-50)

NOTIFICATION

28. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the DEQ, of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours of discovery of the malfunction. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of its discovery. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the DEQ.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

GENERAL CONDITIONS

29. **Right of Entry** - The permittee shall allow authorized local, state and federal representatives, upon the presentation of credentials:
- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
 - c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9 VAC 5-170-130 and 9 VAC 5-80-1180)

- 30. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.

(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

- 31. **Maintenance/Operating Procedures** - At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance;
- b. Maintain an inventory of spare parts;
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum;
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

(9 VAC 5-50-20 E and 9 VA 5-80-1180 D)

32. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
(9 VAC 5-20-180 J and 9 VAC 5-80-1180 D)

33. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the application for this permit or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emission unit;
- d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time the application for this permit is submitted.

(9 VAC 5-80-1210 F)

34. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the DEQ, of the change in ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

35. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

ATTACHMENT C:
3/5/12 NSR PERMIT



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

VALLEY REGIONAL OFFICE

4411 Early Road, P.O. Box 3000, Harrisonburg, Virginia 22801

(540) 574-7800 Fax (540) 574-7878

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Amy Thatcher Owens
Regional Director

March 5, 2012

Mr. Robert Dragon
Vice President of Operations
O'Sullivan Films, Inc.
1944 Valley Avenue
Winchester, Virginia 22601

Location: City of Winchester
Registration No.: 80333
Plant ID No.: 51-840-0060

Dear Mr. Dragon:

Attached is a modification to your new source review permit dated December 30, 2008 to modify and operate Calender Line No. 2 in accordance with the provisions of the Virginia Regulations for the Control and Abatement of Air Pollution. This permit supersedes your permit dated December 30, 2008. This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and/or civil charges. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on November 29, 2011.

This permit approval to modify and operate shall not relieve O'Sullivan Films, Inc. of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 provides that you may request direct consideration of the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

Mr. Robert Dragon

March 5, 2012

Page 2

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact Kathleen T. Haddock at 540-574-7863 or via email at Kathleen.Haddock@deq.virginia.gov.

Sincerely,



B. Keith Fowler
Deputy Regional Director

Attachment: Permit

cc: Director, OAPP (electronic file submission)
Manager, Data Analysis (electronic file submission)
Barry Brandon, Air Compliance



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

This permit supersedes your permit dated December 30, 2008.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

O'Sullivan Films, Inc.
1944 Valley Avenue
Winchester, Virginia 22601
Registration No.: 80333
Plant ID No.: 51-840-0060

is authorized to modify and operate

Calender Line No. 2

located at

1944 Valley Avenue
Winchester, Virginia

in accordance with the Conditions of this permit.

Approved on

3/5/12

A handwritten signature in black ink, appearing to be "B. J. M.", written over a horizontal line.

Deputy Regional Director, Valley Region

Permit consists of 10 pages.

Permit Conditions 1 to 28.

Attachment – Source Testing Report Format, one page.

INTRODUCTION

This permit approval is based on the permit applications dated May 4, 2004, May 18, 2006, July 13, 2006, August 21, 2006, July 19, 2007, and October 6, 2011, including amendment information dated November 28, 2011, and supplemental information dated July 1, 2004, August 13, 2004, August 26, 2004, August 30, 2004, August 11, 2006, October 5, 2006, October 25, 2006, November 13, 2006, February 1, 2007, May 7, 2007, August 16, 2007, January 15, 2008, and July 24, 2008. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action. In addition, this facility may be subject to additional applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-20 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

PROCESS REQUIREMENTS

1. **Equipment List** - Equipment at this facility consists of the following:

Equipment to be Modified			
Reference No.	Equipment Description	Rated Capacity	Federal Requirements
CAL2 Ribbons	Ribbon grinder for Calender Line No. 2	1,000 pounds/ hour	N/A

Equipment permitted prior to the date of this permit			
Reference No.	Equipment Description	Rated Capacity	Federal Requirements
Cal 2	Calender Line No. 2 - Nippon Roll Calender	3.51 tons/hour	N/A
Calmix 2b1	Calender No. 2 Pre-blender	1.76 tons/hour	N/A
Calmix 2b2	Calender No. 2 Pre-blender	1.76 tons/hour	N/A
Calmix 2a	Banbury Mixer	3.51 tons/hour	N/A

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.
(9 VAC 5-80-1180 D 3)

2. **Emission Controls** – Particulate matter emissions (PM/PM-10) from the pre-blenders (Calmix 2b1 and Calmix 2b2) shall be controlled by fabric filters. Each fabric filter shall be provided with adequate access for inspection and shall be in operating when Calmix 2b1 and 2b2 are operating.
(9 VAC 5-80-1180)
3. **Emission Controls** – PM/PM-10 emissions from the Banbury mixer (Calmix 2a) shall be controlled by a fabric filter. The fabric filter shall be provided with adequate access for inspection and shall be in operation when the Calmix 2a is operating.
(9 VAC 5-80-1180)
4. **Emission Controls** – PM/PM-10 emissions from the Calender No. 2 Ribbon Grinder (CAL2 Ribbons) shall be controlled by a baghouse. The baghouse shall be provided with adequate access for inspection and shall be in operation when CAL2 Ribbons is operating.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
5. **Fabric Filters** – Each fabric filter serving the pre-blenders (Calmix 2b1 and Calmix 2b2) and the Banbury mixer (Calmix 2a) shall be installed, maintained, calibrated, and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations.
(9 VAC 5-80-1180)
6. **Emissions Testing** - The permitted facility shall be modified so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. This includes constructing the facility/equipment such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing a stack or duct that is free from cyclonic flow. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.
(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

OPERATING/EMISSION LIMITATIONS

7. **Throughput** – The throughput of raw materials processed by Calender Line No. 2 shall not exceed 24,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180)

8. **Process Emission Limits** - Emissions from the operation of the two pre-blenders (Calmix 2b1 and Calmix 2b2) shall not exceed the limits specified below:

PM	0.38 lbs/hr	1.3 tons/yr
PM-10	0.38 lbs/hr	1.3 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 2 and 5.
(9 VAC 5-80-1180)

9. **Process Emission Limits** - Emissions from the operation of the Banbury mixer (Calmix 2a) shall not exceed the limits specified below:

PM	0.56 lbs/hr	1.9 tons/yr
PM-10	0.56 lbs/hr	1.9 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 3 and 5.
(9 VAC 5-80-1180)

10. **Process Emission Limits** - Emissions from the operation of the Calender Line No. 2 Ribbon Grinder (CAL2 Ribbons) shall not exceed the limits specified below:

PM	0.37 lbs/hr	1.6 tons/yr
PM-10	0.37 lbs/hr	1.6 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition 4.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

11. **Emission Limits** - Emissions from the operation of the Nippon Roll Calender (Cal 2) shall not exceed the limits specified below:

Particulate Matter	4.53 lbs/hr	15.5 tons/yr
PM-10	4.53 lbs/hr	15.5 tons/yr
VOC	8.38 lbs/hr	28.6 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition 7.

(9 VAC 5-80-1180)

12. **Visible Emission Limit** - Visible emissions from Calender Line No. 2 (STK-021) shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by EPA Method 9 (reference 40 CFR Part 60, Appendix A).

(9 VAC 5-80-1180)

13. **Visible Emission Limit** - Visible emissions from each fabric filter serving the pre-blenders (Calmix 2b1 and Calmix 2b2) and Banbury mixer (Calmix 2a) shall not exceed five percent opacity as determined by EPA Method 9 (reference 40 CFR Part 60, Appendix A).

(9 VAC 5-80-1180)

14. **Visible Emission Limit** - Visible emissions from the CAL2 Ribbons baghouse (STK007a) shall not exceed five percent opacity. This condition applies at all times except during startup, shutdown, and malfunction.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

RECORDS

15. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. Records shall include, but are not limited to:

- Annual throughput of raw materials processed by Calender Line No. 2, in tons, calculated monthly as the sum of each consecutive 12-month period.
- Weekly visible emission stack inspections of Calender No. 2 stack (STK-021) and Calender No. 2 Ribbon Grinder (CAL2 Ribbons) and, if applicable, pre-blenders (Calmix 2b1 and Calmix 2b2) and Banbury mixer (Calmix 2a) including:

1. The date, time, and name of person performing each inspection;
 2. Whether or not there were visible emissions;
 3. Results of EPA Method 9 (40 CFR 60, Appendix A) testing; and
 4. Any maintenance or repairs performed as a result of these inspections.
- c. Emission factors calculated for particulate matter and VOC emissions to verify compliance with the emissions limitations in Conditions 8, 9, 10, and 11.
 - d. Results of all stack tests and visible emission evaluations.
 - e. Scheduled and unscheduled maintenance, and operator training.
 - f. Records of malfunctions, as required by Condition 20.
 - g. The date that the pressure drop monitoring device is installed on the CAL2 Ribbons baghouse, if applicable, as required by Condition 19.c.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-1180 and 9 VAC 5-50-50)

CONTINUING COMPLIANCE DETERMINATION

16. **Stack Testing** – Upon request by the DEQ, the permittee shall conduct additional stack testing from the Calender Line No. 2 stack (STK-021) to demonstrate compliance with the emission limits contained in this permit. The details of the tests shall be arranged with the DEQ.
(9 VAC 5-80-1180 and 9 VAC 5-50-30 G)
17. **Visible Emissions Evaluation** – The permittee shall perform weekly inspections of the Calender Line No. 2 stack (STK-021) to determine the presence of visible emissions. If during the inspection visible emissions are observed, an EPA Method 9 (40 CFR 60, Appendix A) visible emission evaluation (VEE) shall be conducted by a certified observer. The VEE shall be conducted for a minimum period of six minutes. If any of the observations exceed the standard, the observation period shall continue until 60 minutes of observation have been completed. If the 60-minute VEE indicates a violation of the standard, timely corrective action shall be taken.
(9 VAC 5-80-1180 and 9 VAC 5-50-30 G)
18. **Visible Emissions Evaluation** – If in the future, the pre-blender (Calmix 2b1 or Calmix 2b2) stacks or Banbury mixer (Calmix 2a) stack are vented to the atmosphere, the permittee shall thereafter perform weekly inspections of each unit (Calmix 2b1, Calmix 2b2 and Calmix 2a) stack vented to the atmosphere to determine the presence of visible emissions. If during the inspection visible emissions are observed, an EPA Method 9 (40 CFR 60, Appendix A)

visible emission evaluation (VEE) shall be conducted by a certified observer. The VEE shall be conducted for a minimum period of six minutes. If any of the observations exceed the standard, the observation period shall continue until 60 minutes of observation have been completed. If the 60-minute VEE indicates a violation of the standard, timely corrective action shall be taken. All observations and corrective action shall be recorded.
(9 VAC 5-80-1180 and 9 VAC 5-50-30 G)

19. Visible Emissions Evaluation – The permittee shall perform periodic monitoring of the CAL2 Ribbons baghouse (STK007a) as follows:

- a. At a minimum of once per week during source operation, the permittee shall determine the presence of visible emissions from the CAL2-Ribbon Grinder baghouse. If during the inspection, visible emissions are observed, a visible emissions evaluation shall be conducted in accordance with EPA Method 9 (reference 40 CFR 60, Appendix A). The VEE shall be conducted for a minimum period of six minutes. If any of the observations exceed the applicable opacity limit of five percent, the observation period shall continue until 60 minutes of observations have been completed.
- b. If visible emissions inspections conducted during 12 consecutive weeks show no visible emissions from the baghouse stack, the permittee may reduce the visible emissions monitoring frequency to once per month. Anytime the monthly visible emission inspections show visible emissions, or when requested by the DEQ, the monitoring frequency shall be increased to once per week for that stack.
- c. If the permittee is required to conduct a VEE in accordance with EPA Method 9 more than once per calendar year, a pressure drop monitoring device shall be installed on the baghouse within 30 days of the VEE. The monitoring device shall be installed, maintained, calibrated, and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the baghouse is operating. To ensure good performance, the pressure drop gauge shall be observed by the permittee with a frequency of not less than once per day.

(9 VAC 5-80-1180 and 9 VAC 5-50-30 G)

NOTIFICATIONS

- 20. Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the DEQ of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours of discovery of the malfunction. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of its discovery. When the condition causing the failure or

malfunction has been corrected and the equipment is again in operation, the permittee shall notify the DEQ in writing.

(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

GENERAL CONDITIONS

21. Permit Suspension/Revocation - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit;
- d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

22. Right of Entry - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9 VAC 5-170-130 and 9 VAC 5-80-1180)

23. Maintenance/Operating Procedures – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

24. Record of Malfunctions – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

25. Notification for Facility or Control Equipment Malfunction - The permittee shall furnish notification to the DEQ of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the DEQ.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

26. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)
27. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the DEQ of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)
28. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

SOURCE TESTING REPORT FORMAT

Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test Dates.
4. Tester; name, address and report date

Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. *Signed by reviewer

Copy of approved test protocol

Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. *For each emission unit, a table showing:
 - a. Operating rate
 - b. Test Methods
 - c. Pollutants tested
 - d. Test results for each run and the run average
 - e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section. Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

Test Results

1. Detailed test results for each run
2. *Sample calculations
3. *Description of collected samples, to include audits when applicable

Appendix

1. *Raw production data
2. *Raw field data
3. *Laboratory reports
4. *Chain of custody records for lab samples
5. *Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

* Not applicable to visible emission evaluations

ATTACHMENT D:
CAM PLAN RATIONALES AND 2001 AND 2006 SOB CAM PLAN EVALUATIONS

ATTACHMENT C: CAM Plan submitted by PolyOne

COMPLIANCE ASSURANCE MONITORING (CAM) PLAN

PAINT LINE 4 WITH THERMAL OXIDIZER

The Geon Engineered Films, Inc. (GEON) Winchester, VA polyvinyl chloride (PVC) Calendering, Coating, and Printing facility is operating under Virginia Department of Environmental Quality stationary source permit to install and operate dated 23 February 2000 under Registration No. 80333. GEON had submitted its Title V operating permit application in December 1997. The timing of the submittal negated the need to address CAM for potentially affected sources covered within the application. Subsequently, GEON required the installation of a new paint line to meet its sales commitments. It is designated Paint Line 4. The Paint Line 4 emissions levels and subsequent control technology evaluation required the installation of a thermal oxidizer to abate VOC emissions. Because Paint Line 4 was installed after submittal of the initial Title V application, has federally enforceable applicable requirements and has a control device to reduce emissions, a CAM Plan is required for that paint line. The Plan must address activities by the permittee to assure compliance with federally enforceable limits.

The federally enforceable applicable requirements for Paint Line 4 are found in Conditions 5 and 9 of the facility permit as follows:

Condition 5

VOC emissions from Paint Line 4 shall be controlled by a permanent total enclosure and a RTO. Paint Line 4 and the RTO shall be provided with adequate access for inspection.

Condition 9

The RTO serving Paint Line 4 shall maintain a control efficiency for VOC of no less than 99 percent on a mass basis or maintain at all times an emission rate no greater than 7.8 pounds per hour.

EMERALD VALLEY

APR 24 2000

Condition 12 of the permit establishes a monitoring requirement as follows:

The RTO controlling Paint Line 4 shall maintain a minimum combustion zone temperature of 1550°F and a residence time of 1.0. The minimum combustion zone temperature shall be calculated as a three-hour average. Details concerning the method of calculating the three-hour average combustion zone temperature shall be arranged with the Director, Valley Regional Office.

The ability to meet the minimum 99% VOC destruction efficiency and the 7.8 lb/hr emission level in Condition 9 as correlated to the combustion zone temperature criteria in Condition 12 was established through stack testing conducted in March 1999 and documented in a report to VA DEQ in April 1999.

GEON believes the required level of monitoring in the permit Condition 12 meets CAM criteria. To insure the correlation between combustion zone temperature and destruction efficiency is maintained, GEON will conduct emissions testing in approximately two years from the initial testing in March 1999. If the correlation holds up, GEON will then conduct testing in five year intervals thereafter. In addition, the physical integrity of the total enclosure will be maintained and operators will be trained to keep all access doors and windows closed during routine operation of the enclosed equipment.

To ensure proper operation of the oxidizer, GEON will conduct an annual maintenance check of the oxidizer per Smith Engineering recommended procedures.

In summary, the CAM Plan for the Paint Line 4 and oxidizer will be:

- Monitor and record the oxidizer combustion zone temperature to ensure the three-hour average temperature is minimally 1550°F.
- Conduct stack testing circa March 2001 to confirm the 99% VOC destruction efficiency and 7.8 lb/hr VOC emission level requirements at the permitted combustion zone temperature of 1550°F, three-hour averages. Should the combustion zone temperature correlation be proven again, the testing will be done in five year intervals.
- Maintain the physical integrity of the total enclosure.
- Train the process operations to keep all total enclosure access doors and windows closed during routine operation of the enclosed equipment.

- Conduct and document annual maintenance checks of the oxidizer per Smith Engineering recommended procedures.

GEON believes the Plan meets the criteria established in VA DEQ CAM Guidance, last modified 7 May 1996.

DERVALLEY

APR 24 2000

NO. _____
FILE# _____

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

PolyOne Engineered Films, Inc.
Winchester, Virginia
Permit No. VRO80333

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, PolyOne Engineered Films, Inc. has applied for a Title V Operating Permit for its performance polymer and engineered film calendaring, coating, and printing facility in Winchester. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: Laura C. Rodiack Date: 5-21-01
Laura C. Rodiack
(540) 574-7857

Air Permit Manager: Sharon G. Foley Date: 5-21-01
Sharon G. Foley, P.E.

Regional Permit Manager: Larry M. Simmons Date: 5/21/01
Larry M. Simmons, P.E.

is required. The testing shall be determined, by either the permittee or supplier, using EPA Reference Method 24 (40 CFR 60, Appendix A). Each coating shipment must be identified by a product formulation number that may be correlated to Reference Method 24 results. Emission calculations must be based on the most recent test results for each formulation. The quarterly tests may be discontinued after actual annual emissions are below 75% of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each formulation be used in lieu of MSDS information.

In PolyOne's case, the likelihood of emission violations from the paint lines is very low. For several years, PolyOne has operated well below (at less than 50% of) its allowable limits. The paint lines are controlled by RTOs that are subject to extensive parametric monitoring requirements. Periodic stack testing of the RTOs is also required. Emissions vary little due to use of controls and of coatings having similar VOC content. It is not economically reasonable to perform reference method testing on the coatings if actual emissions are below 75% of allowable emissions. The likelihood of an emissions violation when actual emissions are below the 75% threshold is low given the other monitoring requirements imposed in the permit. The required monitoring of RTO parameters, periodic stack testing, VOC usage records, and the obligation to test coatings if the actual/allowable emissions ratio exceeds 75% provide a reasonable assurance of compliance with the limits and therefore satisfies the periodic monitoring requirement.

There is no monitoring for the visible emissions requirement. Historically, there have been no visible emissions from the paint line RTOs. Operation of the painting operations is therefore not expected to result in visible emissions.

Compliance Assurance Monitoring (CAM)

PolyOne's title V permit application was found to be complete before April 20, 1998. Subsequent to the completeness determination, PolyOne installed Paint Line 4 (PNT4), which is a major source of HAPs, after controls. As a result, Paint Line 4 is subject to CAM requirements (40 CFR 64).

The monitoring prescribed for Paint Line 4 in PolyOne's minor NSR permit satisfies much of the CAM requirements. PolyOne submitted a CAM Plan April 24, 2000 (Attachment C), which, in addition to the temperature monitoring required by its minor NSR permit, proposes periodic maintenance of the RTO and periodic stack testing. Based on PolyOne's CAM proposal, the following indicators have been chosen for CAM:

- 1) Combustion zone temperature of at least 1550 °F
- 2) Semi-annual inspections of the RTO valves to verify seal integrity
- 3) Periodic performance testing of RTO (before September 30, 2001, and every three years thereafter; frequency may be reduced if first two tests (not including initial test already completed) show compliance)

The Plan references performance test results (test date March 31, 1999) derived in accordance with the minor NSR permit to verify compliance with the destruction efficiency requirement. The minimum combustion zone temperature required in the minor NSR permit (1550 °F) was based on the performance test conditions. The test results, previously approved by and retained on file at VRO, establish the correlation between the required indicator range (combustion zone temperature greater than or equal to 1550 °F) and compliance with the destruction efficiency requirement. In addition to stating the acceptable minimum combustion zone temperature, CAM incorporated into the permit specifies thermocouple measurement range and chart recorder sensitivity. Further, it elaborates on the data collection frequency and procedure, codifying PolyOne's current practice. CAM additionally requires an annual check of thermocouple accuracy.

Based on discussions between VRO staff and a representative of Smith Engineering, the RTO manufacturer, VRO staff has concluded that the RTO valve system operation is integral to achieving the required 99% destruction efficiency. Valve integrity, i.e., prevention of leakage through closed butterfly valves on air lines leading to the regenerative beds, is just as important as temperature in maintaining destruction efficiency in the 99% range. Therefore, the CAM requirements incorporated into the Title V permit increase the frequency and specify the focus of the maintenance checks proposed in PolyOne's plan. CAM included in the permit requires semi-annual inspections that focus on verifying valve seal integrity and repair or replacement of the valves as needed. CAM provisions further state that such inspections shall be conducted by the RTO manufacturer or an authorized technician familiar with RTO operating principles.

A third provision of CAM for Paint Line 4's RTO is periodic stack testing. CAM included in the permit requires stack testing before March 2001 and every three years thereafter. If the first two tests show compliance, PolyOne may request a reduction in testing frequency. Physical integrity of the permanent total enclosure shall be verified concurrently with the stack test.

The table below summarizes the permit provisions that, according to 40 CFR 64, must be in the Title V permit:

Table 3. Permit conditions required by 40 CFR 64 (CAM)

40 CFR 64 reference	Requirement – What must be included in permit	PolyOne's permit provision
64.6(c)1	Approved monitoring approach, including indicators to be monitored, indicator measurement methods, and performance criteria in 40 CFR 64.3	CAM Plan (permit Attachment A) specifies listed requirements
64.6(c)2	Means of defining excursions and associated averaging period	Excursion and averaging period are defined in Condition IV.A.12
64.6(c)3	The obligation to conduct Compliance Assurance Monitoring	Obligation is stated in Condition IV.B.5
64.6(c)4	If appropriate, minimum data availability requirement	Condition IV.B.1 requires continuous temperature monitoring and recording; CAM Plan (permit Attachment A) specifies method of calculating three-hour average.

The permit also establishes a threshold (more than six excursions in a semi-annual period) for developing a CAM Quality Improvement Plan (QIP) according to 40 CFR 64.8. The permit defines an excursion as any three-hour period of operation during which the average combustion zone temperature is outside the range specified in the incorporated CAM Plan.

Table 4 summarizes the reporting and recordkeeping provisions that, according to 40 CFR 64, must be included in the Title V permit.

Table 4. Reporting and recordkeeping required by 40 CFR 64 (CAM)

40 CFR 64 reference	Reporting or Recordkeeping Requirement	PolyOne's permit provision
64.9(a)(2)(i)	Summary of number, duration, and cause of excursions and corrective actions taken	Requirement in Condition IV.E.2
64.9(a)(2)(ii)	Summary of number, duration, and cause of monitoring equipment downtime incidents, other than for routine calibration checks	Requirement in Condition IV.E.2
64.9(a)(2)(iii)	Description of actions taken to implement a QIP and, upon completion of QIP, documentation that QIP was completed and reduced the likelihood of excursions	Requirement in Condition IV.E.2
64.9(b)	Records of monitoring data, monitor performance data, corrective actions taken, written QIPs, actions taken to implement a QIP, and other supporting information	Requirement in Condition IV.C.9

CAM requirements for Paint Line 4 (PNT4) have been summarized in a table and included as an attachment to the permit. The requirements have been incorporated into the permit by reference (in Condition IV.B.5 in the Painting Operations monitoring section). The permit includes a condition stating PolyOne's obligation to conduct monitoring specified in the permit's CAM attachment. The parametric monitoring, work practices, and periodic stack testing included in the permit's CAM plan will provide an assurance of compliance with applicable requirements for Paint Line 4 (PL4) and therefore satisfy the requirements of 40 CFR 64.

Other Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by Condition 25 of the Minor NSR permit. These records include:

- Certified MSDS or VOC Data Sheet showing VOC content of each coating used
- RM24 or 24A test results, if the testing requirement is triggered by actual emissions
- the monthly and rolling annual throughput of each coating
- VOC recovered each month
- monthly and rolling annual emissions of VOC
- average combustion zone temperature of each RTO during actual painting operations
- notation of any three-hour periods during actual painting operations during which the average combustion zone temperature was below the required value
- strip chart showing continuous combustion zone temperature for RTO serving PNT4

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5. CAM PLAN

The federal compliance assurance monitoring (CAM) rule is promulgated ^{TO:} ~~as~~ 40 CFR Part 64.
The CAM Rule requires compliance monitoring for large sources at Title V facilities. The CAM monitoring requirements apply to certain large emissions sources employing air pollution control devices. Applicability is assessed on a pollutant-by-pollutant basis and is addressed for the Winchester plant sources in subsection 5.1 below.

The deadline for submission of the CAM Plans is set forth in 40 CFR 64.5. For Title V facilities that submitted Title V applications prior to April 20, 1998, the CAM Plans are required when the application for renewal of the initial Title V permit is submitted. Accordingly, PolyOne is submitting a CAM Plan for the RTO control device serving the Paint Lines 2 and 3, Laminator 3, and the Paint Kitchen as part of this application. The RTO serving Paint Line 4 is already subject to CAM and the CAM Plan has been incorporated into the current Title V permit.

5.1 CAM APPLICABILITY

The applicability requirements of the CAM rule (40 CFR 64.2) requires Title V sources subject to emission limitations to propose compliance monitoring methods for emitting units employing control devices if potential emissions prior to control exceed major source thresholds. CAM applicability is assessed on a pollutant-by-pollutant basis based on the following three criteria: (1) emissions of the pollutant under consideration are limited by a federally enforceable emission limit; (2) a "control device" is utilized to assure compliance with this limit; and, (3) pre-control emission rates exceed the Title V major source threshold (typically 100 tpy for criteria pollutants).

The sources that employ air pollution control devices at the Winchester facility are:

- PL4 – Paint Line 4 which employs an RTO (CTRL2) to control VOC and vHAP emissions. This control device is already operating under a CAM Plan.
- PL2, PL3, PK, LAM3 – Paint Lines 2 and 3, Paint Kitchen, and Laminator 3 which employ an RTO (CTRL1) to control VOC and HAP emissions. This control device meets the criteria for CAM applicability because pre-control VOC emissions exceed 100

tpy. However, because this source will be subject to the MACT Subpart JJJJ standard effective December 5, 2005 source may be exempt from CAM per section 64.2(b) of 40 CFR Part 64.

- CALMIX1a-1b, CALMIX2a-2b, CALMIX3a-3c – Calender mixing and blending operations are controlled by small fabric filter collectors that are vented indoors. PolyOne has determined that pre-control PM emission rates for each of these collectors is less than 100 tpy, and consequently does not believe that these sources are subject to the CAM Rule as discussed below.
- CAL1-CAL3 – The calendering operations employ “stack-in-stack” systems to reduce visible emissions caused by plasticizer emissions from the calendering operations. Because these systems were installed voluntarily and are not required to meet Virginia state particulate matter or opacity standards, PolyOne does not believe that these sources are subject to the CAM Rule.
- RESCONV1-RESCONV2 – The bulk material storage silos employ small fabric filter bin vent collectors. PolyOne utilizes these dust collectors primarily for product recovery and consequently does not believe that these sources are subject to the CAM Rule as discussed below.

The CAM Rule does not apply to control devices with pre-control emission rates that are less than the major source thresholds. PolyOne has assessed the amount of dust that is collected in each of the calender blender fabric filters and the amounts are significantly less than 100 tpy for each collector. As such, these dust collectors are not subject to the CAM Rule.

The CAM Rule excludes devices that are primarily used for product recovery from the definition of “control device”. The storage silo fabric filter collectors are designed as part of the silos and are used to separate product during pneumatic loading. As such, these filters are not considered control devices in the CAM Rule.

The stack-in-stack systems operated on the calender lines were not installed in order to meet Virginia state or federal air emission requirements. Rather, they were installed voluntarily to

reduce visible emissions. Because their operation is not necessary to meet air emissions limits, these systems are not subject to CAM.

5.2 CAM PLAN FOR RTO SERVING PL2, PL3, PK, AND LAM3

PolyOne is providing a proposed CAM Plan for the RTO (CTRL1) that serves Paint Lines 2 and 3, the Paint Kitchen, and Laminator 3. This RTO is currently required to meet a minimum VOC destruction efficiency of 95% and to operate at a temperature of 1,475F. Because this RTO is similar in design to the RTO (CTRL2) that serves Paint Line 4, PolyOne is proposing a CAM Plan that is similar to the Paint Line 4 CAM Plan that has been approved by the VA DEQ.

The federally enforceable applicable requirements for the sources controlled by CTRL1 are found in the following permit conditions:

Title V VRO80333 Condition IVA(1) Volatile organic compound (VOC) emissions from Paint Lines 2 and 3 (PL2 - PL3) shall be controlled by a capture system having an efficiency of no less than 80% and a regenerative thermal oxidizer (RTO). The RTO shall be provided with adequate access for inspection and shall be in operation when Paint Line 2 or Paint Line 3 is operating.

(9 VAC 5-80-110 and Condition 5 of 4/21/05 Permit)

Condition 7 of 4/21/05 Minor NSR Permit VOC emissions from the Paint Kitchen (PK) shall be controlled by a permanent total enclosure and a RTO having a control efficiency of at least 95%. The RTO shall be provided with adequate access for inspection and shall be in operation when the Paint Kitchen (PK) is operating.

(9 VAC 5-80-110 and Condition 7 of 4/21/05 Permit)

Title V VRO80333 Condition IVA(4) The RTO serving Paint Lines 2 and 3 (PL2 – PL3) shall maintain a control efficiency for VOC of no less than 95 percent on a mass basis.

(9 VAC 5-80-110 and Condition 8 of 4/21/05 Permit)

Title V VRO80333 Condition IVA(7) The RTO controlling Paint Lines 2 and 3 (PL2 - PL3) shall maintain a minimum combustion zone temperature of 1475°F and a residence time of at least 0.5 second. The minimum combustion zone temperature shall be calculated as a three-hour average. Details concerning the method of calculating the three-hour average combustion zone temperature shall be arranged with the Director, Valley Region.

(9 VAC 5-80-110 and Condition 11 of 4/21/05 Permit)

The ability to meet the minimum 95% VOC destruction efficiency specified in these permit conditions is correlated to the combustion zone temperature criterion which was established through stack testing.

PolyOne believes the required level of monitoring in the Title V Permit Condition IVA(7) meets CAM criteria. To ensure the correlation between combustion zone temperature and destruction efficiency is maintained, PolyOne proposes to use the required MACT initial compliance test program in early 2006. If the correlation holds up, PolyOne will then conduct testing in five year intervals thereafter. In addition, the physical integrity of the paint line, paint kitchen, and laminator enclosures will be maintained and operators will be trained to keep all access doors and windows closed during routine operation of the enclosed equipment.

To ensure proper operation of the oxidizer, PolyOne will conduct an annual maintenance check of the oxidizer consistent with the maintenance conducted on the Paint Line 4 RTO.

In summary, the CAM Plan for the CTRL1 oxidizer will be:

- Monitor and record the oxidizer combustion zone temperature to ensure the three-hour average temperature is minimally 1475°F. Temperature will be measured with a Type K thermocouple. The accuracy of the thermocouple will be checked annually. A QIP Plan will be required if more than six excursions below the minimum temperature occur per semi-annual reporting period.
- Conduct stack testing circa May 2006 to confirm the 95% VOC destruction efficiency at the permitted combustion zone temperature of 1475°F, three-hour averages. Should the combustion zone temperature correlation be proven again, the testing will be done in five year intervals.

- Maintain the physical integrity of the enclosures.
- Train the process operations to keep all total enclosure access doors and windows closed during routine operation of the enclosed equipment.
- Conduct and document semi-annual maintenance checks of the oxidizer per recommended procedures. The seal integrity of the valves will be verified and repairs made if necessary.

It should be noted that the MACT Subpart JJJ standard will apply to the coating lines controlled by this RTO. PolyOne is required to conduct initial compliance testing of the RTO within 180 days of the Subpart JJJJ initial compliance date of December 5, 2005. The Subpart JJJJ standard requires that PolyOne establish parametric monitoring systems that correlate with the fume capture and the RTO destruction efficiencies. The appropriate range of these parameters must be established during the initial compliance test program. To streamline the potential applicability of CAM provisions and these MACT requirements to the RTO, PolyOne requests that the VA DEQ allow the MACT test program to serve as the means of establishing CAM monitoring requirements.

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

O'Sullivan Films, Inc.
Winchester, Virginia
Permit No. VRO80333

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, O'Sullivan Films, Inc., has applied for a renewal of its Title V Operating Permit for its Winchester engineered film calendaring, coating, and printing facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

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Date: 6-20-06

Air Permit Manager:

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Sharon G. Foley, P.E.

Date: 6-20-06

Deputy Regional Director:

Larry M. Simmons
Larry M. Simmons, P.E.

Date: 6/20/06

formulation. The quarterly tests may be discontinued after actual annual emissions are below 75% of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each formulation be used in lieu of MSDS information.

In O'Sullivan's case, the likelihood of emission violations from the paint lines is very low. For several years, O'Sullivan has operated well below (at less than 50% of) its allowable limits. The paint lines are controlled by RTOs that are subject to extensive parametric monitoring requirements. Periodic stack testing of the RTOs is also required by the facility's CAM Plans (see discussion below). Emissions vary little due to use of controls and of coatings having similar VOC content. It is not economically reasonable to perform reference method testing on the coatings if actual emissions are below 75% of allowable emissions. The likelihood of an emissions violation when actual emissions are below the 75% threshold is low given the other monitoring requirements imposed in the permit. The required monitoring of RTO parameters, periodic stack testing, VOC usage records, and the obligation to test coatings if the actual/allowable emissions ratio exceeds 75% provide a reasonable assurance of compliance with the limits and therefore satisfies the periodic monitoring requirement.

The initial Title V permit included a requirement to perform stack testing on the RTO serving a paint line if emissions from the paint line(s) exceeded 50% of the allowable emissions. The testing was to be performed within 180 days of determining such an exceedence or within five calendar years of the previous stack test, whichever occurred later. The requirement has been removed in the Title V renewal permit because, under the CAM Plans in the renewal permit, both RTOs are required to be tested at least once every five years (see CAM discussion below). The condition is therefore no longer needed.

There is no monitoring for the visible emissions requirement. Historically, there have been no visible emissions from the paint line RTOs. Operation of the painting operations is therefore not expected to result in visible emissions.

Compliance Assurance Monitoring (CAM)

O'Sullivan has two control devices that are subject to Compliance Assurance Monitoring (CAM), the requirements of which are found at 40 CFR 64. The RTO (RTO2) serving Paint Line 4 (PNT4) has been subject to CAM since the initial Title V permit issuance, because its post-control emissions of HAPs exceed major-source levels and O'Sullivan's Title V application was modified to add Paint Line 4 after April 20, 1998. The RTO (RTO1) serving Paint Lines 2 & 3 (and Laminator 3) is subject to CAM upon renewal of the Title V permit, because post-control VOC emissions from these units are at or above the major-source threshold of 100 tons per year. Because O'Sullivan's initial Title V application pertaining to Paint Lines 2 & 3 and Laminator 3 was complete before April 20, 1998, CAM did not apply to these units during the initial Title V permit term. According to 40 CFR 64.5(a)(3), CAM is applicable to these units upon renewal of the Title V permit.

The monitoring prescribed for the paint lines in O'Sullivan's minor NSR permit satisfies much of the CAM requirements. The CAM Plan for PNT4 (RTO2) remains largely unchanged in the renewed Title V permit. The only two changes made to the original CAM Plan are (1) the allowance for the stack testing required by 40 CFR 63 Subpart JJJJ (Paper and Other Web Coating MACT) to count for one of the periodic stack tests required by the CAM Plan, and (2) the allowance for changing the minimum RTO temperature requirement, if appropriate, as a result of the MACT-required stack test. The justification and rationale for the original RTO2 CAM Plan is appended as Attachment C.

O'Sullivan's renewal application included a proposed CAM Plan for the RTO serving Paint Lines 2 & 3 and Laminator 3. The proposed CAM Plan is patterned after the current CAM Plan for RTO2, with the following compliance indicators:

- 1) Combustion zone temperature of at least 1475 °F;
- 2) Periodic performance testing of RTO1 (initial test to be conducted near May 2006 and repeated at least once each permit term (i.e., every five years)); and
- 3) Capture efficiency monitoring for enclosures around each emissions unit (Paint Line 2 (PL2), Paint Line 3 (PL3), Paint Kitchen (PK), and Laminator 3 (LAM3)) and a monthly verification pressure drop values.

The minimum combustion zone temperature required in the minor NSR permit and as a CAM performance indicator (1475 °F) was based on the temperature in a previous stack test that demonstrated compliance with the 95.0% destruction efficiency requirement for the RTO. The test results, previously approved by and retained on file at VRO, establish the correlation between the required indicator range (combustion zone temperature greater than or equal to 1475°F) and compliance with the destruction efficiency requirement. In addition to stating the acceptable minimum combustion zone temperature, CAM incorporated into the permit specifies thermocouple measurement range and chart recorder sensitivity. Further, it elaborates on the data collection frequency and procedure, codifying O'Sullivan's current practice. CAM additionally requires an annual check of thermocouple accuracy.

Another provision of CAM for RTO1 is periodic stack testing. CAM included in the permit requires stack testing near May 2006 and at least once every permit term (i.e., every five years) thereafter.

An important aspect of the overall control scheme for Paint Lines 2 & 3 (PL2 & PL3), Laminator 3 (LAM3), and the Paint Kitchen (PK) is the capture efficiency achieved by the housing and ductwork surrounding each emission unit. The Paint Kitchen (PK) is required by the permit to be under permanent total enclosure (100% capture efficiency), while the other emissions units have various capture efficiency requirements (80% capture for Paint Lines 2 & 3 and 95% capture for Laminator 3). The CAM Plan, therefore, includes monitoring for capture efficiency, based on initial testing to be conducted in accordance with the Paper and Other Web Coating

MACT (see Condition X.D.4 of renewal permit) and ongoing monitoring of pressure drop sensors across each enclosure (or section of enclosure) and of fan motor auxiliary contacts and a monthly verification of pressure drop values. The details of the monitoring plan are to be developed by O'Sullivan in accordance with Condition X.B.6, which codifies the Paper and Other Web Coating MACT (40 CFR 63 Subpart JJJJ) requirement to develop a capture efficiency monitoring system for all subject coating lines (including the paint lines and laminators).

The combustion temperature monitoring, differential pressure monitoring, and periodic stack testing requirements included in the permit's CAM plan for RTO1 will provide an assurance of compliance with applicable requirements for Paint Lines 2 & 3 (PL2 & PL3), the Paint Kitchen (PK), and Laminator 3 (LAM3) and therefore satisfy the requirements of 40 CFR 64.

The table below summarizes the permit provisions that, according to 40 CFR 64, must be in the Title V permit:

Table 3. Permit conditions required by 40 CFR 64 (CAM)

40 CFR 64 reference	Requirement – What must be included in permit	O'Sullivan's permit provisions
64.6(c)1	Approved monitoring approach, including indicators to be monitored, indicator measurement methods, and performance criteria in 40 CFR 64.3	CAM Plans (permit Attachments A and B) specifies listed requirements
64.6(c)2	Means of defining excursions and associated averaging period	Excursion and averaging period are defined in Conditions IV.A.13, IV.A.14, and V.A.8.
64.6(c)3	The obligation to conduct Compliance Assurance Monitoring	Obligation is stated in Conditions IV.B.5 and V.B.5.
64.6(c)4	If appropriate, minimum data availability requirement	Condition IV.B.1 requires continuous temperature monitoring and recording; Each CAM Plan (permit Attachments A and B) specifies method of calculating three-hour average.

The permit also establishes thresholds (number of excursions from a performance indicator in a semi-annual period) after which O'Sullivan is required to develop a CAM Quality Improvement Plan (QIP) according to 40 CFR 64.8. The permit defines an excursion as any three-hour period of operation during which the average combustion zone temperature is outside the range specified in the incorporated CAM Plan or a monthly pressure verification result that is below the pressure level determined in initial testing.

Table 4 summarizes the reporting and recordkeeping provisions that, according to 40 CFR 64, must be included in the Title V permit.

Table 4. Reporting and recordkeeping required by 40 CFR 64 (CAM)

40 CFR 64 reference	Reporting or Recordkeeping Requirement	O'Sullivan's permit provisions
64.9(a)(2)(i)	Summary of number, duration, and cause of excursions and corrective actions taken	Requirement in Conditions IV.E.3 and V.E.2
64.9(a)(2)(ii)	Summary of number, duration, and cause of monitoring equipment downtime incidents, other than for routine calibration checks	Requirement in Conditions IV.E.3 and V.E.2
64.9(a)(2)(iii)	Description of actions taken to implement a QIP and, upon completion of QIP, documentation that QIP was completed and reduced the likelihood of excursions	Requirement in Conditions IV.E.3 and V.E.2
64.9(b)	Records of monitoring data, monitor performance data, corrective actions taken, written QIPs, actions taken to implement a QIP, and other supporting information	Requirement in Conditions IV.C.10 and V.C.10

CAM requirements for Paint Lines 2 & 3 (PL2 & PL3), Paint Kitchen (PK), and Laminator 3 (LAM3) have been summarized in a table and included as an attachment to the permit (Attachment B). The requirements have been incorporated into the permit by reference (in Condition IV.B.5 in the Painting Operations monitoring section and in Condition V.B.5 in the Laminating Operations section). The permit includes a condition stating O'Sullivan's obligation to conduct monitoring specified in the permit's CAM attachment. The Plan also defines what constitutes an excursion for each indicator and the threshold above which the number of excursions would require a Quality Improvement Plan (QIP). The permit also requires that records be kept of the monitoring required by the Plan and requires that reports of excursions, monitor downtime incidents and actions taken to implement a QIP be submitted semi-annually. The parametric monitoring, work practices, and periodic stack testing included in the permit's CAM plan will provide an assurance of compliance with applicable requirements for the emissions units and therefore satisfy the requirements of 40 CFR 64.

Other Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by Condition 27 of the 4/21/05 Minor NSR permit. These records include:

- Certified MSDS or VOC Data Sheet showing VOC content of each coating used
- RM24 or 24A test results, if the testing requirement is triggered by actual emissions
- the monthly and rolling annual throughput of each coating
- VOC recovered each month
- monthly and rolling annual emissions of VOC
- average combustion zone temperature of each RTO during actual painting operations
- notation of any three-hour periods during actual painting operations during which the average combustion zone temperature was below the required value
- strip chart showing continuous combustion zone temperature for RTO serving PL4
- all performance test results, including stack testing and testing to verify that enclosures meet the permanent total enclosure criteria enumerated in the permit.
- data required to show compliance with each CAM Plan (see Table 4)

**ATTACHMENT E:
CORRESPONDENCE RELATED TO OLD MACT APPLICABILITY DETERMINATION**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
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11-11-05

Sharon G. Foley, P.E.
Air Permit Manager
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NOV 10 2005

Dear Ms. Foley:

On February 9, 2005, you asked that EPA concur, if possible, with the Valley Regional Office (VRO) of the Virginia Department of Environmental Quality's (VADEQ's) proposed conclusions regarding questions that PolyOne Engineered Films, Inc. (PolyOne), which operates a vinyl film production and coating facility located in Winchester, Virginia, had raised regarding regulatory applicability. You explained that the VADEQ's conclusions pertained to questions PolyOne had raised regarding whether or not operations at its Winchester, Virginia facility would be subject to the recently promulgated Miscellaneous Coating Manufacturing (MCM) National Emission Standards for Hazardous Air Pollutants (NESHAP), found at 40 CFR 63, Subpart HHHHH, and/or to the recently promulgated Organic Liquid Distribution (OLD) NESHAP, found at 40 CFR 63, Subpart EEEE. These NESHAPs are also commonly known as Maximum Achievable Control Technology (MACT) standards.

EPA does concur with the VRO's conclusions regarding the applicability of these NESHAPs, as discussed below. It should be noted that under its NESHAP delegations the VADEQ now has the authority to make final applicability determinations with respect to these recent standards, within the limits set forth in the delegations and related requirements. EPA announced delegation to the VADEQ of the authority to implement and enforce the NESHAP standards found at 40 CFR part 63 in Federal Register notices published on January 26, 1999 (64 FR 3938) and on January 8, 2002 (67 FR 825). EPA explains in those notices that the VADEQ may obtain delegation of authority to implement future NESHAPs issued by EPA by adopting the new NESHAPs into the State's regulations, informing EPA of this fact, and committing to enforce the new NESHAPs. On June 28, 2005, the VADEQ notified EPA that the VADEQ had incorporated the MCM and the OLD NESHAPS, as well as other NESHAPS recently promulgated by EPA, into the State's regulations, and that the VADEQ was committed to enforcing these NESHAPs.

The VRO described PolyOne's operations at its facility in Winchester, Virginia as follows: "PolyOne produces and coats vinyl films for use in automotive, medical and other industries and is a major source of both VOC and HAPs. Processes at the facility include calendaring of vinyl sheets and printing, coating, and laminating of the sheets. Printing is conducted on a rotogravure printing press, which is subject to the Printing and Publishing MACT (40 CFR 63, Subpart KK). Paint lines and laminators are used to coat the vinyl films and are



subject to the Paper and Other Web Coating (POWC) MACT (40 CFR 63, Subpart JJJJ). PolyOne operates a Paint Kitchen in which coatings used in its paint lines are formulated and mixed prior to application.”

The VRO reported that PolyOne’s principal question with respect to the MCM NESHAP, Subpart HHHHH, was whether or not the that NESHAP would apply to the operations at the Company’s Winchester, Virginia facility that prepare coatings for use at the facility. The VRO explained that it had concluded that “PolyOne is not subject to the MCM MACT because its coating mixing operations are affiliated operations under the POWC or the Printing MACTs, and are therefore exempt from Subpart HHHHH.” EPA agrees with this conclusion, which is consistent with the facts that: 1) coating operations are listed as examples of affiliated operations in both the preamble of the POWC MACT and in the preamble and the regulatory text of the Printing and Publishing MACT, and 2) the final MCM MACT, at 40 CFR 63.7985(d)(2), specifically exempts affiliated operations.

The preamble of the final Paper and Other Web Coating MACT (Subpart JJJJ) states that “[a]ffiliated operations such as coating mixing for viscosity adjustment; color tint or additive blending, or pH adjustment; cleaning of coating lines and coating line parts; handling and storage of coatings and solvent; and conveyance and treatment of wastewater are part of the paper and other web surface coating source category.” (See 67 FR 72332, December 4, 2002.) This is also stated in the document entitled, “Paper and Other Web Coating (Subpart JJJJ) - Questions and Answers (Q&A’s) - Final 5/29/2003” which is posted on EPA’s MACT information website at http://www.epa.gov/ttn/atw/powc/powcqa5_03.pdf. That Q&A document goes on to confirm that “These operations will not be covered by the MOCM or MCM NESHAPs.”

The preamble of the final Printing and Publishing MACT, Subpart KK, states that “The final standards impose limits on organic HAP emissions from rotogravure and wide-web flexographic printing. Publication rotogravure facilities must demonstrate compliance on a monthly basis considering all organic HAP used on publication rotogravure presses and all affiliated equipment, including proof presses, cylinder and parts cleaners, ink and solvent mixing and storage equipment, and solvent recovery equipment.” (See 61 FR 27134, May 30, 1996). The regulatory text of Subpart KK states that the affected sources subject to the Subpart include, among others, “All of the publication rotogravure presses and all affiliated equipment, including proof presses, cylinder and parts cleaners, ink and solvent mixing and storage equipment, and solvent recovery equipment at a facility.” (See 40 CFR §63.821(a)(1)).

The MCM MACT states, at 40 CFR 63.7985(d), that “[t]he requirements for miscellaneous coatings manufacturing sources in this Subpart do not apply to operations described in paragraphs (d)(1) through (4) of this section.” Paragraph (d)(2) lists as operations which are not subject “The affiliated operations located at an affected source under Subparts GG (National Emission Standards for Aerospace Manufacturing and Rework Facilities), KK (National Emission Standards for the Printing and Publishing Industry), JJJJ (NESHAP: Paper and Other Web Coating), future MMMM (National Emissions Standards for Miscellaneous Metal Parts and Products Surface Coating Operations), and SSSS (NESHAP: Surface Coating of Metal Coil) of 40 CFR part 63. Affiliated operations include, but are not limited to, mixing or

dissolving of coating ingredients; coating mixing for viscosity adjustment, color tint or additive blending, or pH adjustment; cleaning of coating lines and coating parts; handling and storage of coatings and solvent; and conveyance and treatment of wastewater.”

The VRO reported that PolyOne’s principal question with respect to the OLD NESHAP, Subpart EEEE, was whether or not that NESHAP would apply to the operations at its Winchester, Virginia facility that receive and store organic liquids used in coating and other operations. The VADEQ explained that it had concluded that the bulk storage tank area would be subject to the OLD NESHAP because that NESHAP applies to such storage areas unless they are affiliated operations under another NESHAP, and the storage tanks did not qualify as such affiliated operations. THE VRO stated that “the affiliated operations considered part of the POWC or the Printing and Publishing MACT categories “include the mixing and handling of solvents immediately prior to the application (e.g., in the PNTKTN and the rotogravure printing mix area) but that the operations do not extend to the bulk storage tank area of the facility, where the solvents are collected and stored for a variety of end uses.” The EPA also agrees with this conclusion, which is consistent with the VRO’s report that the solvents in the bulk tank storage area of the facility “are received and stored for use in various parts of the facility and not necessarily designated for use in the paint lines or rotogravure areas.”

The VRO also reported its conclusions with respect to seven more detailed questions that PolyOne had raised regarding the applicability of these NESHAPs. EPA also concurs with the VRO’s conclusions regarding these questions. The VRO’s conclusions, and EPA’s reasons for concurring with them, are discussed below:

- (1) VRO Conclusion: “The Subpart EEEE transfer rack requirements do not apply to the loading of organic liquids into storage tanks.”

EPA Comment: EPA concurs with this conclusion based on consideration of the VRO’s description of PolyOne’s operations, the Subpart EEEE definition of “transfer rack,” and the Subpart EEEE specification of transfer rack control requirements. The VRO reported that “PolyOne’s transfer rack is used only for loading from transport vehicles to bulk tanks; they do not load material from the tanks into transport vehicles.” Given this, EPA agrees that Subpart EEEE’s control requirements would not apply, because the rack does not fall under Subpart EEEE’s definition of transfer rack and, consistent with this fact, is not included in the Subpart’s specification of transfer rack control requirements. Subpart EEEE, §63.2406, defines a transfer rack, in relevant part, as “a single system used to load organic liquids into transport vehicles.” Subpart EEEE’s specification of control requirements for transfer racks at existing sources, found in Table 2 of that Subpart, states that the requirements apply to “liquid loading volume through transfer racks out of the facility.”

- (2) VRO Conclusion: “The transfer rack loading arm and storage tank provisions of Subpart HHHHH (MCM MACT) are not applicable to PolyOne.”

EPA Comment: EPA has agreed with the VRO's general determination that PolyOne's Winchester, Virginia facility is not subject to the MCM MACT, and thus also agrees that the facility is not subject to that MACT's transfer rack loading arm and storage tank provisions.

- (3) VRO Conclusion: "Subpart EEEE is applicable to handling, storage and transfer of solvents up to the mixing/formulation areas associated with the coating lines (i.e., up to the Paint Kitchen, adhesive preparation area(s), and the rotogravure ink preparation area, all of which would be affiliated operations under either Subpart JJJJ or Subpart KK)."

EPA Comment: EPA concurs. The VRO's conclusion is consistent with the fact that Subpart EEEE applies to OLD operations located at, or part of a major source of HAP emissions, except for storage tanks, transfer racks, and equipment leak components that are part of an affected source under another 40 CFR part 63 MACT standard, and for certain other exemptions specified at 40 CFR §§ 63.2334 and 63.2338. Subpart EEEE defines OLD operations, at 40 CFR §63.2406, as "the combination of activities and equipment used to store or transfer organic liquids into, out of, or within a plant site regardless of the specific activity being performed. Activities include, but are not limited to, storage, transfer, blending, compounding, and packaging."

- (4) VRO Conclusion: "Since Subpart HHHHH has been determined to not be applicable to operations at PolyOne, solvent transfer between the bulk storage tanks/drum storage and the coating mixing area (PNTKTN) would be subject to applicable standards of the OLD MACT (Subpart EEEE).

EPA Comment: EPA agrees that since solvent transfer between the bulk storage tanks/drum storage and the coating mixing area (PNTKTN) is not subject to Subpart HHHHH or another non-OLD MACT, the solvent transfer operations are subject to the OLD MACT. See also EPA's comment regarding VRO Conclusion (3) above, as that comment is also applicable to VRO Conclusion (4).

- (5) VRO Conclusion: "PolyOne is subject to the applicable storage tank requirements of the OLD MACT (Subpart EEEE).

EPA Comment: EPA agrees. PolyOne's storage tanks storing organic liquids fall under the applicability provisions of the OLD MACT found at 40 CFR §§ 63.2334 and 63.2338, and they do not qualify for the exclusions found at 40 CR 63.2338(c). See also EPA's comment regarding VRO Conclusion (3) above, as that comment is also applicable to VRO Conclusion (5).

- (6) VRO Conclusion: The equipment leak requirements of Subpart EEEE are not applicable to PolyOne. Furthermore, the equipment leak requirements of Subpart HHHHH are not applicable to PolyOne because Subpart HHHHH is not applicable to the facility.

EPA Comment: EPA agrees that the equipment leak requirements of Subpart EEEE are not applicable given that: 1) Subpart EEEE provides, at 40 CFR 63.2346(c), that the equipment leak components standards apply to an affected source only if it has at least one storage tank or transfer rack that meets the applicability criteria for control in Table 2 of Subpart EEEE, and that 2) PolyOne asserts that none of its storage tanks or transfer racks is subject to the control requirements in Table 2 of Subpart EEEE. EPA also agrees with the VRO that PolyOne is not subject to Subpart HHHHH, including the equipment leak requirements.

- (7) VRO Conclusion: The standards of 40 CFR Subparts KK and JJJJ do not apply to affiliated operations.

EPA Comment: EPA agrees that the standards specified in 40 CFR Subparts KK and JJJJ do not apply to affiliated operations. The Subpart JJJJ preamble, as the VRO noted, states that affiliated operations are part of the paper and other web coating source category, but are not considered part of the affected source under the rule. Further, EPA's Background Information Document for the Subpart KK rulemaking action, as the VRO also noted, states that the agency considered affiliated operations for product rotogravure printing (the type of printing PolyOne conducts) and concluded that there were insufficient data to establish MACT requirements with respect to the operations considered.

If the VRO has any remaining concerns or questions, please contact me.

Sincerely,



Ray Chalmers
Environmental Protection Specialist



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Valley Regional Office

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

R. Bradley Chewing, P.E.
Valley Regional Director

February 9, 2005

Ms. Helen Drago
Air Protection Division
3AP11
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Location: City of Winchester
Registration: 80333
Plant ID: 51-840-0060

Re: Applicability determination for PolyOne Engineered Films, Inc., for 40 CFR 63 Subparts EEEE and HHHHH

Dear Ms. Drago:

On December 16, 2004, the Valley Regional Office (VRO) of the Department of Environmental Quality (DEQ) received a request from PolyOne Engineered Films, Inc. (PolyOne) for a determination of applicability of two recently promulgated NESHAP standards. Specifically, PolyOne has requested that DEQ determine applicability of the NESHAPs for Organic Liquid Distribution (OLD, Subpart EEEE) and for Miscellaneous Coating Manufacturing (MCM, Subpart HHHHH) to its operations.

PolyOne produces and coats vinyl films for use in automotive, medical and other industries and is a major source of both VOC and HAPs. Processes at the facility include calendaring of vinyl sheets and printing, coating, and laminating of the sheets. Printing is conducted on a rotogravure printing press, which is subject to the Printing and Publishing MACT (40 CFR 63, Subpart KK). Paint lines and laminators are used to coat the vinyl films and are subject to the Paper and Other Web Coating (POWC) MACT (40 CFR 63, Subpart JJJJ). PolyOne operates a Paint Kitchen in which coatings used in its paint lines are formulated and mixed prior to application. PolyOne currently operates under a Title V operating permit and two minor new source review permits.

This conclusion is based on both the definition of "transfer rack" in 40 CFR 63.2406 and the description of subject transfer rack activity in Table 2 of Subpart EEEE. 40 CFR 63.2406 defines transfer rack as "a single system used to load organic liquids into transport vehicles." Transfer racks are listed as part of the affected source in 40 CFR 63.2338(b). However, the emission limits applicability thresholds in Table 2 of Subpart EEEE for volume of material loaded through transfer racks is based on loading "out of the facility". PolyOne's transfer rack is used only for loading from transport vehicles to bulk tanks; they do not load material from the tanks into transport vehicles.

- (2) *The transfer rack loading arm and storage tank provisions of Subpart HHHHH (MCM MACT) are not applicable to PolyOne.*

This conclusion is based upon the determination that Subpart HHHHH is not applicable to PolyOne's operations.

- (3) *Subpart EEEE is applicable to the handling, storage and transfer of solvents up to the mixing/formulation areas associated with the coating lines (i.e., up to the Paint Kitchen, adhesive preparation area(s), and the rotogravure ink preparation area, all of which would be affiliated operations under either Subpart JJJJ or Subpart KK).*
- (4) *Since Subpart HHHHH has been determined to not be applicable to operations at PolyOne, solvent transfer between the bulk storage tanks/drum storage and the coating mixing area (PNTKTN) would be subject to applicable standards of the OLD MACT (Subpart EEEE).*
- (5) *PolyOne is subject to the applicable storage tank requirements of the OLD MACT (Subpart EEEE).*

We have concluded that PolyOne is not subject to the MCM MACT (Subpart HHHHH) because, as described in its letter, all coating formulation/mixing is performed for the exclusive use on and immediately prior to application on the coating or printing lines. If not for the coating or printing operations, PolyOne would not operate the formulation/mixing areas. The coatings formulated are not sold or used off-site. We have therefore concluded that the formulation/mixing areas are affiliated operations under the POWC or Printing MACTs and are therefore exempt from the MCM MACT (Subpart HHHHH). We find that the bulk storage tanks are, however, part of the affected source under Subpart EEEE.

- (6) *The equipment leak requirements of Subpart EEEE are not applicable to PolyOne. Furthermore, the equipment leak requirements of Subpart HHHHH are not applicable to PolyOne because Subpart HHHHH is not applicable to the facility.*

VRO requests EPA's review of our conclusions concerning the applicability of Subparts EEEE, JJJJ, and related rules to PolyOne's operations. We further request your concurrence, if possible, with our conclusions or an indication of a different finding, if appropriate. If you would like to discuss our request or need further information, please call me at (540) 574-7821 or Laura Justin at (434) 316-9350 or (540) 574-7857.

Sincerely,



Sharon G. Foley, P.E.
Air Permit Manager

Attachment – Applicability determination request letter from PolyOne
(December 16, 2004)

cc: Robert Dragon, Plant Manager, PolyOne Engineered Films, Inc.
Kevin Burkett, Environmental Manager, PolyOne Engineered Films, Inc.
Tamera Thompson, Director of Air Permit Programs, DEQ
Ron Phillips, Air Compliance Manager, VRO
File - VRO

PolyOne

Engineered Films Group

PolyOne Engineered Films, Inc.
1944 Valley Avenue
Winchester, VA 22604
phone 540.667.6666
fax 540.722.2695
www.polyone.com
December 13, 2004

Ms. Sharon Foley
Commonwealth of Virginia
Department of Environmental Quality
4411 Early Road
P.O. Box 3000
Harrisonburg, VA 22801

DEQ-VALLEY

DEC 16 2004

TO: LRJ
FILE: _____

Re: MACT Initial Notification and Request for Applicability Determination for the Organic Liquid Distribution and Miscellaneous Coating Manufacturing MACT Standards at 40 CFR 63 Subparts EEEE and HHHHH for the PolyOne Engineered Films, Inc. Winchester, VA Facility

Dear Ms. Foley:

PolyOne Engineered Films, Inc. (PolyOne) is providing this notification in accordance with 40 CFR 63.9(b) of the General Provisions for National Emission Standards for Hazardous Air Pollutants (NESHAP) that the PolyOne Winchester, Virginia vinyl coating receipt, storage, transfer, and mixing operations are potentially subject to the provisions of the 40 CFR 63 Subpart EEEE and HHHHH NESHAP standards. The Subpart EEEE NESHAP (the OLD MACT standard) applies to certain organic liquid distribution operations and is potentially applicable to the Winchester bulk solvent receipt and storage tank operations. The Subpart HHHHH NESHAP (the Miscellaneous Coating MACT standard) applies to certain coating manufacturing operations and is potentially applicable to the Winchester ink, paint, and adhesive mixing and transfer operations. The PolyOne Winchester facility currently operates under Title V Operating Permit No. VRO80333 which identifies applicability of the 40 CFR 63 Subpart KK NESHAP for Printing and Publishing to the plant's rotogravure line vinyl printing operations. In addition, PolyOne has recently submitted initial notification of the applicability of the provisions of the 40 CFR 63 Subpart JJJJ NESHAP for Paper and Other Web Coating to the Winchester paint and laminator coating operations.

Because the PolyOne Winchester plant is subject to these two other MACT standards for vinyl coating and printing operations which potentially “overlap” with the OLD and Miscellaneous Coating MACT standards, PolyOne is requesting that the VA DEQ and/or the U.S. EPA make a determination of applicability of the MACT standards referenced above. Accordingly, PolyOne is providing a formal request for applicability determination as part of this notice. In an abundance of caution, PolyOne is also including, as part of this submittal, the MACT initial notifications pursuant to section 63.9(b) of the General Provisions of 40 CFR 63 for the Subpart EEEE and HHHHH MACT standards.

Request for MACT Applicability Determination

PolyOne operates vinyl sheet printing, painting, and laminator lines at the Winchester facility. The rotogravure printing line (Title V Emission Unit LEMB) is subject to the NESHAP for Printing and Publishing (40 CFR 63 Subpart KK). PolyOne complies with the Subpart KK standards by ensuring that the HAP content of the inks, thinners, and solvents used on the line remain less than 4.0 percent, by weight on a monthly average basis. Because the rotogravure line ink mixing and handling operations are considered “affiliated operations” and are subject to the Subpart KK standard, the ink mixing and handling operations are exempt from the Miscellaneous Coating Manufacturing provisions of 40 CFR 63 Subpart HHHHH pursuant to section 63.7985(d)(2).

PolyOne operates three (3) paint lines and five (5) laminator lines at the Winchester facility which are subject to the requirements of the Paper and Other Web Coating NESHAP at 40 CFR 63 Subpart JJJJ. These lines include paint and adhesive mixing operations that support the web coating operations. Because the paint and adhesive mixing operations are considered “affiliated operations” and are subject to the Subpart JJJJ standard, the paint and adhesive mixing and handling operations are exempt from the Miscellaneous Coating Manufacturing provisions of 40 CFR 63 Subpart HHHHH pursuant to section 63.7985(d)(2).

Because the PolyOne coating mixing and handling operations are defined as Subpart KK and JJJJ “affiliated operations” in the Subpart HHHHH standard at section 63.7985(d)(2), these operations may be exempt from the Subpart EEEE “OLD MACT” pursuant to sections 63.2338(c)(1). PolyOne requests a determination as to which components of the Winchester solvent, ink, paint, and adhesive receipt, storage, mixing, and handling operations are considered “affiliated operations” under Subparts KK and JJJJ, and which are therefore exempt from the provisions of the Subpart EEEE and HHHHH standards. A description of the operations is included in the MACT Initial Notifications provided as part of this submittal.

PolyOne also requests a determination of the relative applicability of the provisions of 40 CFR 63 Subparts EEEE and HHHHH to the Winchester facility solvent receipt, transfer rack, storage tank, and transfer and mixing operations based on the description of the plant operations provided in this submittal. To assist in this determination, PolyOne requests clarification from the VA DEQ and/or the U.S. EPA regarding the following specific applicability questions:

- (1) Do the "transfer rack" requirements of 40 CFR 63 Subpart EEEE apply to the loading of organic liquids *out of transport vehicles* into the Winchester bulk solvent storage tanks? The definition of "transfer rack" in section 63.2406 of Subpart EEEE indicates that it would only include *loading organic liquids into transport vehicles*. The Winchester facility only receives solvent by tank truck for use at the facility coating lines. The solvent is loaded into the facility solvent storage tanks. No solvent is loaded from the storage tanks into tank trucks.
- (2) If the transfer rack and storage tank requirements of Subpart EEEE are applicable to the Winchester facility then would the "transfer rack loading arm and storage tank" provisions of 40 CFR 63 Subpart HHHHH not be applicable to the Winchester facility pursuant to section 63.7985(c)?
- (3) Are any of the requirements of 40 CFR 63 Subpart EEEE potentially applicable to any solvent transfer or mixing operations "downstream" of the bulk storage tanks? These downstream operations consist of solvent piping and ink, paint, and adhesive mixing operations supplying coatings to the Winchester plant vinyl film printing and coating lines.
- (4) Do any of the requirements of 40 CFR 63 Subpart HHHHH potentially apply to the solvent transfer operations between the bulk solvent storage tanks or the drum storage and the coating mixing operations?
- (5) Which, if any, of the "storage tank" requirements of 40 CFR 63 Subparts EEEE and HHHH potentially apply to the Winchester plant bulk solvent storage tank operations? Can PolyOne choose applicability of one of these two standards to the storage tanks? The standards each include applicability exemptions in the case that another MACT standard applies to storage tank operations.
- (6) What solvent transfer, mixing, and handling equipment at the Winchester facility is potentially subject to the "equipment leak components" requirements of 40 CFR 63 Subparts EEEE and HHHHH? Is the solvent tank loading rack pumping and piping equipment subject to the "equipment leak components" requirements of Subpart EEEE if the Subpart EEEE "transfer rack" requirements are determined to be applicable to this equipment?

(7) To which solvent, ink, paint, and adhesive storage, mixing, and handling components do the printing and coating MACT requirements of 40 CFR 63 Subparts KK and JJJJ apply? Do these standards apply to receipt and storage of solvents, inks, adhesives or coatings either in bulk or in 55-gallon drums? Does applicability of these standards to equipment components "start" at the point that either compliant inks or coatings are mixed or that capture and control systems are implemented to comply with the coating HAP content limitations? For example, the PolyOne Winchester facility includes a paint kitchen that mixes and transfers paints to the paint lines. The paint kitchen is located in a total enclosure that is exhausted to an oxidizer for VOC control. If PolyOne chooses to comply with the 40 CFR 63 Subpart JJJJ coating HAP emission limitation by meeting a HAP capture and control standard, then would the requirements of Subparts EEEE and/or HHHHH be exempt for the equipment in the total enclosure?

Initial MACT Notification for 40 CFR 63 Subparts EEEE and HHHHH

The PolyOne Winchester, VA facility is providing this Initial Notification of the applicability of the 40 CFR 63 Subpart EEEE and HHHHH standards to the Winchester operations. The following information is provided as required by the 40 CFR Part 63 General Provisions at section 63.9(b) for initial notification of applicability.

(i) the name and address of the owner or operator [40 CFR 63.9(b)(2)(i) and (ii)]

PolyOne Engineered Films, Inc.
1944 Valley Avenue
Winchester, VA 22604

Contact Person: Kevin Burkett Phone Number: (540) 667-6666, ext. 274.

(iii) identification of the relevant standard and the source's compliance date [40 CFR 63.9(b)(2)(iii)]

NESHAP for Organic Liquids Distribution (Non-Gasoline), 40 CFR 63 Subpart EEEE
Compliance Date: February 5, 2007

NESHAP for Miscellaneous Coating Manufacturing, 40 CFR 63 Subpart HHHHH
Compliance Date: December 11, 2006

(iv) a brief description of the nature, size, design, and method of operation of the source, including its operating capacity and an identification of emission points for each HAP (or at least a preliminary identification) [40 CFR 63.9(b)(2)(iv)]

(A) 40 CFR 63 Subpart EEEE – Organic Liquid Distribution

Organic Liquid Storage Tanks

PolyOne operates multiple bulk liquid storage tanks at the Winchester plant with capacities ranging from 8,000 gallons to 15,000 gallons each. Some of the tanks store plasticizer compounds with very low vapor pressures which are not classified as “organic liquids” in Section 63.2406 of Subpart EEEE. Two of the tanks store reclaimed solvent material. The remaining tanks store solvent mixtures used to mix topcoats used on the vinyl coating operations at the plant. These storage tanks are listed in the Title V permit as Emission Units TNK1 through TNK0066. Some of the tanks are subject to the NSPS Subpart Kb requirements and others are not.

The topcoat solvent mixtures include organic compounds that are listed hazardous air pollutants in Table 1 to Subpart EEEE. These compounds include toluene, MEK, MIBK, dimethyl formamide, xylene, and ethyl benzene. The concentration of these compounds exceeds 5 percent by weight in the topcoats and the reclaimed solvent and these solvent mixtures are therefore defined as “organic liquids” in Section 63.2406 of Subpart EEEE. PolyOne also operates No. 2 distillate fuel oil storage tanks at the site. Distillate fuel oil is not defined as an organic liquid in Section 63.2406 of Subpart EEEE.

PolyOne has evaluated the vapor pressure of the solvent mixtures at the conditions present in the Winchester storage tanks using the U.S. EPA TANKS program. Under the worst-case combination of solvents, PolyOne estimates that the average annual solvent vapor pressure will not exceed 1.3 psia. The threshold vapor pressure for existing storage tanks with capacities between 5,000-50,000 gallons is listed as 4.0 psia in Table 2 to Subpart EEEE. Consequently, the Subpart EEEE emission limitations will not apply to the existing PolyOne storage tanks.

Transfer Racks and Equipment Leak Components

The solvent storage tanks are loaded from bulk tank trucks through a transfer rack system consisting of pumps, piping, and valves. The tank trucks are not owned by PolyOne and can be from a number of solvent suppliers. The storage tanks are filled from the tank bottoms and the tanks are equipped with pressure relief valves. Solvent is stored in the tanks before being pumped from the tanks to paint, adhesive, and ink mixing operations at the Winchester plant.

The annual organic loading volume through the Winchester transfer rack system does not exceed 800,000 gallons. Consequently, the transfer rack requirements of Subpart EEEE will not apply to the existing PolyOne transfer rack systems. However, if future throughputs exceed 800,000 gallons, and if the organic HAP content of the organic liquid exceeds 98% by weight, then the emissions of organic HAP from the loading operation would have to be vented through a closed vent system to a control device as specified in Table 2, item 7 to Subpart EEEE. This could be achieved by utilizing a vapor balance system to transfer the vapors back to the tank truck and ensuring the tank vapors are appropriately controlled when vented.

Because PolyOne does not own the tank trucks and does not control the tank truck operations and solvent supply location(s), PolyOne will likely choose to avoid any vapor balance requirements by avoiding applicability of the Subpart EEEE provisions to the tank trucks. PolyOne may choose to implement administrative control requirements to ensure that the throughput of organic liquids does not exceed 800,000 gallons per year and/or that the organic HAP content of the liquids does not exceed 98%, by weight to avoid applicability of Subpart EEEE to the transfer rack system and the tank trucks.

The transfer rack system includes pumps, valves, and sampling connections that operate in organic liquids service for more than 300 hours per year. This equipment therefore qualifies as "equipment leak components" as defined in section 63.2346 and is subject to the leak detection and repair provisions (LDAR) of Subpart EEEE. However, the solvent transfer operations "downstream" of the storage tanks, including the piping, pumps, valves, etc. associated therewith is potentially subject to the requirements of other NESHAP standards (e.g., the Miscellaneous Coating Manufacturing NESHAP at Subpart HHHHH) and are exempt from Subpart EEEE applicability per section 63.2338(c)(1). PolyOne intends to implement an LDAR program at the Winchester plant solvent transfer and handling operations to comply with the provisions of 40 CFR 63 Subparts EEEE and/or HHHHH as they are determined to apply to the tank loading operation and to the solvent transfer components located between the tanks and the plant mixing operations.

(B) 40 CFR 63 Subpart HHHHH – Miscellaneous Coating Manufacturing

Coating Mixing and Handling Operations

PolyOne operates various coating, ink, and adhesive mixing operations at the Winchester plant that support the plant vinyl film painting, printing and laminating lines. The plant operates a "paint kitchen" that compounds and mixes paints for use on the three paint lines. The paint kitchen is designated as Emission Unit PNTKTN in the Winchester Title V permit. The paint kitchen includes a process vessel with a capacity in excess of 250 gallons and solvent and coating components including piping, pumps, agitators, and valves. The paint kitchen is included in an enclosure which is exhausted to a Smith regenerative thermal oxidizer (RTO) for VOC control. As such, the emission capture and control requirements of Subpart HHHHH would be satisfied for the paint kitchen process vessel. PolyOne has submitted an initial notification that the paint lines will be subject to the requirements of the Paper and

Other Web Coating NESHAP at 40 CFR 63 Subpart JJJJ. Because the paint kitchen operations may meet the definition of "affiliated operations" in the Subpart JJJJ standard, the paint kitchen may be exempt from Subpart HHHHH pursuant to section 63.7985(d)(3).

PolyOne also operates an ink mixing operation that provides inks for the rotogravure printing line (Title V Emission Unit LEMB). These printing operations are subject to the NESHAP for Printing and Publishing (40 CFR 63 Subpart KK). PolyOne complies with the Subpart KK standards by ensuring that the HAP content of the inks, thinners, and solvents used on the line remain less than 4.0 percent, by weight on a monthly average basis. The ink mixing operations are conducted in 55-gallon drums and do not include a process vessel with a capacity in excess of 250 gallons. Because the ink mixing and handling operations meet the definition of "affiliated operations" in the Subpart KK standard, the ink mixing and handling operations are exempt from Subpart HHHHH pursuant to section 63.7985(d)(3).

PolyOne operates laminate adhesive mixing and handling operations as part of the five laminator lines (Emission Units LAM1, LAM2, LAM3, LAM4, and PEMB). The adhesive mixing operations are conducted in 55-gallon drums and do not include a process vessel with a capacity in excess of 250 gallons. The laminator lines will be subject to the requirements of the Paper and Other Web Coating NESHAP at 40 CFR 63 Subpart JJJJ. Because the laminate adhesive mixing and handling operations may meet the definition of "affiliated operations" in the Subpart JJJJ standard, these mixing and handling operations may be exempt from Subpart HHHHH pursuant to section 63.7985(d)(3).

(v) whether the source is a major source or an area source [40 CFR 63.9(b)(2)(v)]

PolyOne's Winchester vinyl film operations constitute a major source for HAP emissions. That is, potential emissions of HAPs exceed 10 tons per year for any one HAP and exceed 25 tons per year for all HAPs combined. The PolyOne Winchester facility operates under a major source Title V permit that identifies the applicable MACT provisions of 40 CFR 63 Subpart KK for Printing and Publishing as they pertain to the Winchester plant rotogravure printing operations. PolyOne has submitted initial notification of the applicability of the new MACT provisions of 40 CFR 63 Subpart JJJJ for Paper and Other Web surface coating to the Winchester plant laminator line and paint line coating operations.

PolyOne requests that VA DEQ coordinate with the U.S. EPA to ensure that our request for MACT applicability determination is reviewed in a timely manner so that PolyOne can plan to address the potentially applicable MACT requirements prior to the compliance dates. If you have any questions concerning these matters, please feel free to contact Kevin Burkett or me at (540) 667-6666 extension 274 and 760, respectively.

Sincerely,
Polyone Engineered Films, Inc.



Robert Dragon
Plant Manager

cc: Associate Director
Office of Air Enforcement (3AP10)
EPA Region 3 Regional Office
1650 Arch Street
Philadelphia, PA 19103-2029