



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

January 12, 2015

Ms.Carolynne O'Connell
Judd Wire, Inc.
124 Turnpike Road
Turners Falls, MA 01376

RE: Turners Falls (Montague)
Transmittal No.: X257840
Application No.: WE-13-031
Class: *SM-50*
FMF No.: 131077
AIR QUALITY PLAN APPROVAL

Dear Ms. O'Connell:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed operation of twenty eight (28) extrusion machines, nineteen (19) striping machines, and four (4) irradiation vaults (all existing) at your wire manufacturing facility located at 124 Turnpike Road in Turners Falls, Massachusetts ("Facility"). The Application bears the seal and signature of Thomas C. Couture, Massachusetts Registered Professional Engineer Number 27553.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Judd Wire, Inc. (Judd Wire) is a wire and cable manufacturing facility which has been in operation since 1953. Production takes place 24 hours per day, six days per week. They have approximately 275 employees. The facility extrudes an insulating polymer “jacket” onto copper wire. The extruded wire/polymer is marked and striped with inks and passed through one of four irradiation vaults to crosslink the polymer. These processes can vary in order and are detailed below. The Standard Industrial Classification (SIC) code for this facility is 3357, *Drawing and Insulating of Nonferrous Wire*.

All potential emissions were based on operations taking place 8,760 hours per year at maximum process rates and using either industry standard emission factors for ozone or worst-case VOC and HAP contents from material safety data sheets (SDS). As such, the facility has a potential to emit 37.4 tons per year (tpy) of VOCs and 16.7 tpy of total HAPs. VOCs are emitted from the extrusion, marking, and striping processes. HAPs are emitted in the marking and striping processes. The application of markings and/or striping to the wire jacket is done by either a contact printer¹ or an inkjet printer. Of the twenty-eight (28) extrusion machines, two (2) machines have both types of printers installed, but only one printer can be used on the machine at a time. In these two cases, potential emissions were calculated using the contact type printer because this type emits VOCs and HAPs at the highest rate. Ozone, which is a byproduct of the cross-linking process, has a potential generation rate of 34 tons per year.

A Non-Major Comprehensive Plan Application was received from Judd Wire on December 3, 2013. The technical review period was extended by 25 days on March 5, 2014 and Judd Wire was notified on March 28, 2014 that the application was technically deficient. Information was provided by the facility on September 11, 2014. However, additional potential emissions were subsequently identified by Judd Wire and the facility requested an additional 30 days extension to the schedule to further characterize emissions. The facility does not hold a previous Plan Approval.

Extrusion Machines

Judd Wire has twenty seven (27) extrusion machines that apply an insulating polymer jacket onto copper wire. To feed the extrusion machines, Judd Wire prepares polymer pellets with one additional dedicated extrusion machine located in their compounding room. They mix a “general purpose” and/or a “wire & cable” polyvinylchloride (PVC) material with additives such as cross-linking agents and flame retardants and then extrude this polymer mixture into pellet form. The pellets are then fed into the extrusion machines that coat the wire.

¹ A contact printer has a small wheel that spins (approximately 4 inches). The bottom of the wheel picks up ink from a reservoir. Ink is applied to the wire as it is passing over the outside surface of the wheel.

Potential and proposed VOC emissions from the compounding room extrusion process were estimated using emission factors determined by Method 24 of 40 CFR Part 60, Appendix A as supplied by Judd Wire's largest supplier of compounding materials. The flame retardant material contains an ingredient, antimony, listed on the United States Environmental Protection Agency's (USEPA) list of hazardous air pollutants. Judd Wire stated in their application that the antimony compound remains in the matrix of the PVC during the extrusion process. MassDEP agrees with this assessment and so HAP emission limits have not been approved for this part of the process. VOC emissions from the compounding room extrusion machine are vented through a separate 1.4 foot stack (Stack B).

Sixteen (16) of the 27 extrusion machines at Judd Wire are capable of marking the wire. Inks and thinners are used in the marking process. Proposed VOC and HAP emissions from the marking process were estimated by scaling up historical material usage by 75% to allow for future growth and by using worst-case VOC and HAP content information taken from product safety data sheets (SDS).

The compounding room extrusion machine and the high temperature extrusion machines² are equipped with a fabric filter and electrostatic precipitators (ESP), respectively. These units prevent components in the exhaust vent from condensing onto the interior of the duct work which can cause blockages and a fire hazard. It was determined that both devices meet the exemption criteria of 310 CMR 7.02(2)(b)1., because neither device is otherwise required by regulation for air pollution control. VOC and HAP emissions from the operation of each extruder are vented to the atmosphere through four separate identical 1.6 foot diameter exhaust lines (Stacks A, C, D, and H).

Striping Machines

The wires are striped according to specification in one of nineteen (19) striping machines. This process utilizes inks, thinners, and extenders which contain VOCs and HAPs. Emissions from striping were estimated by scaling up historical material usage by 75% to allow for future growth and by using worst-case VOC and HAP content information taken from product safety data sheets (SDS).

Each striping machine has two infrared electric ovens that are not subject to Plan Approval. The striping machines are hand cleaned using a solvent on an as-needed basis. Provisions for best management practices (BMPs) during cleaning operations are included in Table 6, Special Terms and Conditions. VOC and HAP emissions from the operation and cleaning of each striping machine are vented to the atmosphere through a 1.6 foot diameter exhaust line (Stack J).

² High temperature extrusion machines process materials at a temperature of 550°F. Low temperature extrusion machines process materials at a temperature of 375°F.

Irradiation Vaults

The insulating polymer covering the wire is cured in one of four irradiation vaults. An electron beam, or corona treatment, is applied to the coated wire to cross-link the polymer, adding strength and durability to the wire coating. A product of this “corona treatment” process is ozone gas. The irradiation vaults are each under negative pressure. Exhaust is drawn out of the workspace through four separate roof stacks.

Two previous plan approvals were issued for a similar type of process: Uniplast Films, Inc. (#1-P-01-006, dated 5/16/2001) and Pliant Corporation (#1-P-04-041, dated 1/26/2005). For both, it was determined that due to the length of travel required for the ozone to exit the building, the inherent instability of ozone, and the conservative nature of the emission factor applied, the actual amount of ozone emitted from the facility was far less than estimated potentials and that add-on controls for the purpose of ozone control were not cost effective.

The irradiation vaults will be monitored with existing meters that measure the current and voltage. This data will be continuously recorded using a computer software program. As with the two previous plan approvals, an industry standard of 0.04 pounds (lbs) of ozone per kilowatt-hour (kW-hr) will be applied. This estimate of emissions was determined to be the most conservative. Using this emission factor (0.04 lbs/kW-hr) and 8,472 hours of operation per year for each irradiation vault, the proposed ozone emissions are estimated to be 33 tons per year.

Exhaust fans will be mechanically interlocked with the power supply of each irradiation vault to ensure that a negative pressure will draw the ozone gas out of the building through Stacks E, F, I, and G as summarized in Table 7.

Miscellaneous Units Exempt from Plan Approval

Operations also include:

- Conductor Area operations where wire is drawn;
- two (2) Raypac model H9 1262MBH natural gas fired boilers (approximately 1.3 MMBtu/hr each);
- 3 water heaters, and 49 space heaters;
- Safety Kleen solvent degreasers (2), spray gun cleaners (3), and solvent recycling units (3). The solvent degreasers each use less than 100 gallons per month;
- a Generac 70 kilowatt (kW) natural gas-fired emergency generator, installed July 31, 2011. Judd Wire will certify compliance of the generator through the Environmental Results Program (ERP) per 310 CMR 7.26(42); and
- a natural gas-fired evaporation tank (burner is under 10 MMBtu/hr heat input).

Best Available Control Technology (BACT) Statement

Judd Wire has proposed an emission control limitation which will combine best management practices, pollution prevention, and a limitation on raw material usage (310 CMR 7.02(8)(a)2.b.).

Best management practices for handling VOC and HAP materials and MassDEP guidelines for solvent metal degreasing have been included in Table 6, Special Terms and Conditions.

BACT for the operation of the four irradiation vaults, including monitoring, recordkeeping, and reporting provisions has been modeled after two previous plan approvals (Uniplast Film, Inc., #1-P-01-003, dated May 16, 2001 and Pliant Corporation, #1-P-04-041, dated January 26, 2005). Judd Wire also references their air quality permit through the County of San Diego Air Pollution Control District as BACT for the irradiation vaults.

Judd Wire will modify each roof vent if necessary to increase the height to 35 feet above ground level or at least ten feet above roof level. The roof vents will also be designed with good engineering practice as outlined in Table 6, Special Terms and Conditions.

Judd Wire will implement monitoring and recordkeeping practices as specified in 310 CMR 7.72 7.72(1) through (4), (8), and (9) for Reducing Sulfur Hexafluoride Emissions.

Applicable Regulatory Requirements

The facility is subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10.

The facility has stated in its application that it is not subject to the USEPA New Source Performance Standards (NSPS) or the USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPs).

2. EMISSION UNIT IDENTIFICATION

Each Emission Unit (“EU”) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
EU	Description	Design Capacity	Pollution Control Device (PCD)
7	1 - Compounding Room extrusion machine	4,860 lbs/hr extruded	N/A
5	11 – Extrusion machines for wire jacketing with no marking capabilities	0.162 gal/hr of ink total; and 0.134 gal/hr of thinner total	N/A
	16 – Extrusion machines for wire jacketing with marking capabilities		
8	19 - Striping machines	0.193 gal/hr of ink total; 0.159 gal/hr of thinner total; and 0.148 lb/hr of extender total	N/A
3	Irradiation Vault 1 Nissin High Voltage Corporation, Ltd	500 kV; 16 mA (x2 heads); 83.3 cfm blower capacity	N/A
4	Irradiation Vault 2 Wasik Associates, Inc	750 kV; 31.5 mA (x2 heads); 166.6 cfm blower capacity	N/A
10	Irradiation Vault 3 Nissin High Voltage Corporation, Ltd	500 kV; 50 mA (x2 heads); 88.3 cfm blower capacity	N/A
11	Irradiation Vault 4 Nissin High Voltage Corporation, Ltd	800 kV; 50 mA (x2 heads); 88.3 cfm blower capacity	N/A

Table 1 Key:

EU = Emission Unit Number
 kV = kilovolt
 mA = milliamp
 cfm = cubic feet per minute

N/A = not applicable
 lbs/hr = pounds per hour
 gal/hr = gallons per hour

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2			
EU	Operational / Production Limit	Air Contaminant	Emission Limit
7	FR-TPO: ≤ 30,500 lbs/yr ≤ 6,100 lbs/mo	VOC	0.61 TPY ¹ 0.12 TPM
	CL-TPO: ≤ 3,928,200 lbs/yr ≤ 785,640 lbs/mo		
	General purpose PVC: ≤ 21,000 lbs/yr ≤ 4,200 lbs/mo		
	Wire & Cable PVC: ≤ 1,398,300 lbs/yr ≤ 279,660 lbs/mo		
5	-		
5	Marking Ink: ≤ 186 gal/yr ≤ 37.2 gal/mo ≤ 6.3 lbs VOC/gal ≤ 5.01 lbs HAP/gal	VOC	1.2 TPY 0.2 TPM
	Thinner: ≤ 175 gal/yr ≤ 35 gal/mo ≤ 6.9 lbs VOC/gal ≤ 6.9 lbs HAP/gal	Total HAP	1.1 TPY 0.2 TPM
		Single HAP	0.5 TPY 0.1 TPM

Table 2 (continued)			
EU	Operational / Production Limit	Air Contaminant	Emission Limit
8	Printing ink: ≤ 900 gal/yr ≤ 180 gal/mo ≤ 6.3 lbs VOC/gal	VOC	6.4 TPY 1.3 TPM
	Extender: ≤ 84 gal/yr ≤ 17 gal/mo ≤ 7.89 lbs VOC/gal		Total HAP 5.2 TPY 1.0 TPM
	Thinner: ≤ 849 gal/yr ≤ 170 gal/mo ≤ 6.9 lbs VOC/gal	Single HAP	2.5 TPY 0.5 TPM
	Solvent for cleaning: ≤ 96 gal/yr ≤ 32 gal/mo ≤ 6.70 lbs VOC/gal		
3	8,472 hours per year 744 hours per month	Ozone	2.7 TPY ² 0.24 TPM
4	8,472 hours per year 744 hours per month	Ozone	8.0 TPY ² 0.70 TPM
10	8,472 hours per year 744 hours per month	Ozone	8.4 TPY ² 0.74 TPM
11	8,472 hours per year 744 hours per month	Ozone	13.5 TPY ² 1.2 TPM
Facility- wide	-	VOC	8.2 TPY 1.7 TPM
		Total HAP	6.3 TPY 1.3 TPM
		Single HAP	3.0 TPY 0.6 TPM
		Ozone	33 TPY 6.5 TPM

Table 2 Key:

EU = Emission Unit Number
 VOC = Volatile Organic Compounds
 TPY = tons per consecutive 12-month period
 TPM = tons per month
 lbs VOC/gal = pounds of VOC per gallon
 gal/yr = gallons per year
 gal/mo = gallons per month
 HAP (single) = maximum single Hazardous Air

FR-TPO = Flame retardant thermo plastic olefin
 CL-TPO = Cross linking thermo plastic olefin
 PVC = Polyvinyl chloride
 HAP (total) = total Hazardous Air Pollutants.
 lb/yr = pounds per year
 lb/mo = pounds per month
 lbs HAP/gal = pounds of HAP per gallon

Pollutant
Table 2 Notes:

1 – Both monthly and yearly are based on an emission factor of 0.000616 pounds of VOC per pound extruded of General Purpose PVC, 0.000307 pounds of VOC per pound extruded of Wire & Cable PVC, 0.00613 pounds of VOC per pound extruded of FR-TPO, and 0.000193 pound of VOC per pound extruded of CL-TPO as determined by Method 24 of 40 CFR Part 60, Appendix A supplied by Judd Wire’s largest supplier of compounding materials.

2 – Based on an industry standard emission factor of 0.04 lbs/kW-hr.

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3	
EU	Monitoring and Testing Requirements
7	1. In accordance with 310 CMR 7.02(3)(d), the Permittee shall monitor the total amount extruded through EU 7 (in pounds) of: <ul style="list-style-type: none"> a. Flame retardant thermo plastic olefin (FR-TPO); b. Cross linking thermo plastic olefin (CL-TPO); c. General purpose Polyvinyl chloride (PVC); d. Wire & cable PVC.
5	2. In accordance with 310 CMR 7.02(3)(d), the Permittee shall, for each ink and thinner used, monitor the : <ul style="list-style-type: none"> a. Trade name of ink/thinner b. Gallons of ink/thinner used; c. Density of ink/thinner; d. VOC weight fraction; e. Total HAP weight fraction; f. Single HAP weight fraction (including name of single HAP).

Table 3	
EU	Monitoring and Testing Requirements
8	3. In accordance with 310 CMR 7.02(3)(d), the Permittee shall, for each ink, thinner, extender, and cleaning solvent monitor the: <ol style="list-style-type: none"> a. Trade name of product; b. Gallons of product used; c. Density of product; d. VOC weight fraction; e. Total HAP weight fraction; f. Single HAP weight fraction (including name of single HAP).
3, 4, 10, and 11	4. In accordance with 310 CMR 7.02(3)(d), the Permittee shall install and maintain meters that are capable of tracking power consumed (kW) by each irradiation vault.
	5. In accordance with 310 CMR 7.02(3)(d), the Permittee shall install and maintain meters to track hourly usage of each irradiation vault.
Facility- wide	6. The Permittee shall, upon request of the MassDEP, perform or have performed tests to characterize volatile matter content and density of the printing inks and related coatings according to USEPA prescribed methods to demonstrate compliance, such as Method 24A.
	7. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration
	8. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.
	9. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol.
	10. Within 45 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report.

Table 3 Key:

EU = Emission Unit Number	kW = kilowatt
VOC = Volatile organic compound	CMR = Code of Massachusetts Regulations
HAP = Hazardous air pollutant	
USEPA = United States Environmental Protection Agency	MassDEP = Massachusetts Department of Environmental Protection

Table 4	
EU	Record Keeping Requirements
7	1. In accordance with 310 CMR 7.02(3)(d), the Permittee shall record the total amount extruded through EU 7 (in pounds) of: <ol style="list-style-type: none"> a. Flame retardant thermo plastic olefin (FR-TPO); b. Cross linking thermo plastic olefin (CL-TPO); c. General purpose PVC; d. Wire & cable PVC.
5	2. In accordance with 310 CMR 7.02(3)(d), the Permittee shall, for each ink and thinner used, record the following:: <ol style="list-style-type: none"> a. Name of ink/thinner b. Gallons of ink/thinner used; c. Density of ink/thinner; d. VOC weight fraction; e. Total HAP weight fraction; f. Single HAP weight fraction (including name of single HAP).
8	3. In accordance with 310 CMR 7.02(3)(d), the Permittee shall, for each ink, thinner, extender, and cleaning solvent record the following: <ol style="list-style-type: none"> a. Name of product; b. Gallons of product used; c. Density of product; d. VOC weight fraction; e. Total HAP weight fraction; f. Single HAP weight fraction (including name of single HAP).
3, 4, 10, and 11	4. In accordance with 310 CMR 7.02(3)(d), the Permittee shall continuously record readings of current and voltage to the corona treater.
	5. In accordance with 310 CMR 7.02(3)(d), the Permittee shall maintain records of the operating hours of each irradiation vault on a monthly basis.
	6. In accordance with 310 CMR 7.02(3)(d), the Permittee shall, by the 15th day of the month, calculate total ozone emitted for the previous calendar month. This calculation shall be based upon the emission rate of 0.04 pounds of ozone emitted for every kilowatt-hour utilized by the corona treater.

Table 4	
EU	Record Keeping Requirements
Facility-wide	7. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15 th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping .
	8. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	9. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) approved herein on-site.
	10. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	11. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	12. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	13. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	14. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

EU = Emission Unit Number
 SOMP = Standard Operating and Maintenance Procedure
 PVC = Polyvinyl chloride
 CMR = Code of Massachusetts Regulations

PCD = Pollution Control Device
 USEPA = United States Environmental Protection Agency
 VOC = Volatile organic compound
 HAP = Hazardous air pollutant

Table 5	
EU	Reporting Requirements
Facility-wide	<ol style="list-style-type: none"> 1. The Permittee shall, by January 31st of each year, submit to MassDEP an annual summary of the 12 monthly reports from the previous calendar year. The report shall summarize emissions for: 1) each calendar month, and 2) for each rolling twelve month period (current month plus prior eleven months) for each month. 2. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c). 3. The Permittee shall notify the Western Regional Office of MassDEP, BWP Section Chief by telephone: (413) 755-2115, email: marc.simpson@state.ma.us, or fax : (413) 784-1149, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to the Section Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s). 4. The Permittee shall report every three years to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.

Table 5 Key:

EU = Emission Unit Number
 MassDEP = Massachusetts Department of
 Environmental Protection

BWP = Bureau of Waste Prevention
 CMR = Code of Massachusetts Regulations

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU	Special Terms and Conditions
7, 5, 8	<p>1. The Permittee shall institute the following BMPs for VOC handling:</p> <ul style="list-style-type: none"> a. Store all VOC-containing materials in closed containers; b. Ensure that mixing and storage containers used for VOC-containing materials are kept closed at all times except when depositing or removing these materials; c. Minimize spills of VOC-containing materials; d. Convey VOC-containing materials from one location to another in closed containers or pipes; e. Minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleanup solvent; f. Store and dispose of all absorbent materials, such as cloth or paper that are contaminated with VOC-containing materials in non-absorbent containers that shall be kept closed except when placing materials in or removing materials from the container. <p>2. The Permittee shall record information related to evaluating the use of lower VOC containing materials, such as the date of the evaluation, the type of material evaluated, the VOC content, the economic impact/benefit and the technical feasibility. The status of evaluations will be included in annual reporting per Table 5, Provision 1.</p>
8	<p>3. The Permittee shall ensure that exhaust fumes are vented when hand cleaning operations using VOC containing cleaners are taking place.</p>
3, 4, 10, and 11	<p>4. The Permittee shall operate the irradiation vaults in accordance with the manufacturer's recommended standard operating and maintenance procedures.</p> <p>5. If not installed already, the Permittee shall install an interlock that prevents operation of each irradiation vault without the concurrent operation of an associated exhaust blower.</p> <p>6. The Permittee shall post the standard operating procedure as submitted in the application, or any updates hereto, in a conspicuous location on or near each irradiation vault.</p> <p>7. The Permittee shall comply with any manufacturer-recommended maintenance procedures or industry best practices that have the effect of reducing leakage of Sulfur Hexafluoride (SF₆).</p>

Table 6	
EU	Special Terms and Conditions
	8. Upon removal of any GIS containing SF ₆ from the ownership, lease, operation, or control of a GIS owner, the GIS owner shall provide for the secure storage, re-use, recycling, or destruction of the SF ₆ .
Facility-wide	9. The Permittee shall determine whether the current roof stacks meet good engineering practice guidelines as follows and, if necessary, make modifications by June 1, 2015: <ul style="list-style-type: none"> a. The stack shall discharge vertically upwards; b. The stack shall not have rain protection of a type that restricts the vertical exhaust flow; and c. The minimum stack exit height shall be 35 feet above the ground or ten feet above roof level.
	10. In accordance with 310 CMR 7.01(2)(c), within 30 days of installation of the evacuation hood(s) and associated stack(s), the Permittee shall submit a certification to MassDEP that the stack meets requirements 9a. through 9c. as specified above.
	11. EUs 3, 4, 5, 7, 8, 10, and 11 shall consist of the equipment specified in Table 1 herein.

Table 6 Key:

- | | |
|--|---|
| EU = Emission Unit Number | VOC = Volatile Organic Compounds |
| TPM = tons per month | HAP (total) = total Hazardous Air Pollutants. |
| TPY = tons per consecutive 12-month period | BMP = Best Management Practices |
| HAP (single) = maximum single Hazardous Air Pollutant | SF ₆ = Sulfur Hexafluoride |
| GIS = Gas-insulated switchgear as defined in 310 CMR 7.72(2) | |

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”

C. Current stack parameters are listed in Table 7:

Table 7				
EU	Stack Height Above Ground/Roof (feet)	Stack Inside Exit Dimensions (feet)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)
7	42/6	1.4	Compounding Extrusion (Stack B) 2.9	70 - 81
5	27/7	2.5	Extrusion/Marking (Stack A) 10.2	70 - 77
			Extrusion/Marking (Stack C) 26.6	70 - 81
			Extrusion/Marking (Stack D) 30.5	70 - 78
			Extrusion/Marking (Stack H) 27.9	70 - 75
8	26/6	1.6	Striping (Stack J) 97.4	70 - 86
3	32.97/12.97	1.2	Irradiation Vault 1 (Stack E) 32.4	70 - 82
4	35.27/15.27	2.5	Irradiation Vault 2 (Stack F) 6.8	70 - 85
10	27.92/7.92	2	Irradiation Vault 3 (Stack I) 34.8	70 - 75
11	39.76/9.76	1	Irradiation Vault 4 (Stack G) 144.3	70 - 77

Table 7 Key:

EU = Emission Unit Number

°F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Amy Stratford by telephone at (413) 755-2144, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Marc Simpson
Section Chief
Bureau of Waste Prevention

Enclosure:

ecc: MassDEP/Boston - Yi Tian
Doug Stellato, Tighe & Bond, Inc.