DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DIVISION OF AIR AND WASTE MANAGEMENT

Statutory Authority: 7 Delaware Code, Chapter 60; (7 **Del.C.**, Ch. 60)
7 **DE Admin. Code** 1124

PROPOSED

PUBLIC NOTICE

1124 Control of Volatile Organic Compound Emissions

1. Title of the Regulations:

Revisions of 7 **DE Admin. Code** 1124 Sections 8.0, 13.0, 16.0, 23.0, 37.0, 45.0 and 47.0, and submittal of the revisions to the US Environmental Protection Agency (EPA) as revisions to Delaware State Implementation Plan (SIP).

2. Brief Synopsis of the Subject, Substance and Issues:

The Clean Air Act (CAA) Section 182(b)(2) requires that all ozone non-attainment areas, including Delaware, must develop or update relevant regulations to implement Reasonably Available Control Technology (RACT) controls on emission sources covered in EPA's Control Techniques Guidelines (CTG) or Alternate Control Techniques (ACT), and submit the regulations to EPA as State Implementation Plan (SIP) revisions. Recently, the EPA has updated several CTGs and the afore-mentioned revisions to 7 **DE Admin. Code** 1124 reflect DE's efforts accordingly. Specifically,

- Section 8.0, Handling, Storage, and Disposal of Volatile Organic Compounds (VOC). This revision updates the existing work practice standards, and adds a new generally applicable cleaning solvent VOC content limit.
- Section 13.0 Automobile and Light-Duty Truck Coating Operations. This revision sets more stringent emissions limits.
- Section 16.0 Paper Coating. The revision adds "film and foil coating" to the regulated category.
- Section 23.0 Coating of Flat Wood Paneling. The revision sets up more stringent emission limits.
- Section 37.0 Graphic Art Systems. The revision adds "flexible packaging printing" to the regulated category.
- Section 45.0 Industrial Cleaning Solvents. The revision clarifies that the requirements of 45.0 are triggered based on "VOC emissions" rather than "solvent used."
- Section 47.0 Offset Lithographic Printing. The revision adds "letterpress printing" to the regulated category.

3. Possible Terms Of The Agency Action:

None

4. Statutory Basis or Legal Authority to Act:

7 **Del.C.**, Chapter 60, Environmental Control

5. Other Regulations That May Be Affected By The Proposal:

None

6. Notice of Public Comment:

A public hearing will be held on June 2, 2010, beginning at 6:00 pm, in DNREC's Auditorium, R & R Building, 89 Kings Hwy, Dover, Delaware 19901.

7. Prepared By:

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1124 Control of Volatile Organic Compound Emissions

***Please Note: Due to the size of the proposed regulation, it is not being published here. A copy of the regulation is available at:**

http://regulations.delaware.gov/register/may2010/proposed/13 DE Reg XXX 05-01-10.htm

(Break in Continuity of Sections)

8.0 Handling, Storage, and Disposal of Volatile Organic Compounds (VOCs)

~~11/29/1994~~ mm/dd/2010

8.1 Except as provided for in 8.3, the requirements of 8.0 of this regulation apply to: any facility that is subject to any of the requirements of 10.0 through 50.0 of this regulation, and any facility that emits at least 6.8 kg/day (15 lb/day) of VOC before consideration of controls.

8.2 Definitions

"**Cleanup solvent**" means a VOC-containing material used to remove any loosely held uncured (i.e., not dry to the touch) adhesive or sealant that is subject to 4.0 of 7 **DE Admin. Code** 1141 from a substrate, or to clean equipment used in applying an adhesive or sealant subject to 4.0 of 7 **DE Admin. Code** 1141.

"**Electrical and electronic components**" means components and assemblies of components that generate, convert, transmit, or modify electrical energy. Electrical and electronic components include, but are not limited to, wires, windings, stators, rotors, magnets, contacts, relays, printed circuit boards, printed wire assemblies, wiring boards, integrated circuits, resistors, capacitors and transistors. Cabinets in which electrical and electronic components are housed are not considered electrical and electronic components.

"**Flushing**" means pumping a solvent from a reservoir through a pipe or hose or through equipment (e.g., pipes, hoses, tanks) to remove contaminants or residue.

"**Hand-wiping**" means a method of cleaning a surface by physically rubbing it with a material such as a rag, paper, sponge or a cotton swab moistened with a solvent.

"**Medical device**" means an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory that is, (i) intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of diseases, or (ii) is intended to affect the structure or any function of the body, or (iii) is defined in the National Formulary or the United States Pharmacopoeia or any supplement to it.

"**Non-manufacturing area cleaning**" means the cleaning of cafeterias, laboratories, pilot facilities, restrooms, office buildings, etc.

"**Medical Device and Pharmaceutical Manufacturing**" means Medical devices; pharmaceutical products; and associated manufacturing and product handling equipment and material, work surfaces, maintenance tools and room surfaces that are subject to US FDA current Good Manufacturing/ Laboratory Practice, or CDC/NIH guidelines for biological disinfection of surfaces.

"**Pharmaceutical product**" means a preparation or compound, which includes any drug, analgesic, decongestant, antihistamine, cough suppressant, vitamin, mineral or herb supplement intended for human or animal consumption and used to cure, mitigate or treat disease or improve or enhance health.

"**Precision optics**" means the optical elements used in electro-optical devices that are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes of light energy levels.

"**Solvent Cleaning Operation**" means the removal of uncured adhesives, inks, coatings, or contaminants including dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas. Solvent cleaning operations include hand-wiping, surface preparation, flushing and the cleaning of spray guns/cleaning of equipment used to spray coatings, adhesives, etc.

"**Stripping**" means the removal of cured coatings, cured inks, or cured adhesives.

"**Surface preparation**" means the removal of contaminants such as dust, soil, oil, grease, etc., prior to coating, adhesive, or ink applications.

"**Surface preparation solvent**" means a solvent used to remove dirt, oil and other contaminants from a substrate prior to the application of a primer, adhesive or sealant that is subject to 4.0 of 7 **DE Admin. Code** 1141.

8.3 Exemptions.

8.3.1 The requirements of 8.0 this regulation do not apply to any equipment or operation that is specifically subject to the emission limitations of 10.0, 11.0 or 38.0 of this regulation; or to any piece of equipment that is specifically subject to the requirements of 33.0 of this regulation.

8.3.2 Existing sources affected by 8.0 of this regulation shall comply with the provisions of 8.0 of this regulation on and after (insert the effective date), except for the requirements of 8.5 of this regulation. Existing sources affected by 8.5 of this regulation shall comply with the requirements of 8.5 of this regulation beginning as soon as practical, but no later than (insert one year after the effective date). New, modified, or reconstructed sources affected by 8.0 of this regulation shall comply with the provisions of 8.0 of this regulation on and after startup.

8.3.3 The requirements of 8.5 of this regulation shall not apply to any facility subject to 47.0 of this regulation, or to:

8.3.3.1 The surface preparation or cleaning of electrical and electronic components;

8.3.3.2 The surface preparation or cleaning of precision optics;

8.3.3.3 The surface preparation or cleaning of numismatic dies;

8.3.3.4 Stripping of cured inks, coatings, and adhesives;

8.3.3.5 The cleaning of resin, coating, ink, and adhesive mixing, molding, and application equipment;

8.3.3.6 Surface preparation associated with research and development activities;

8.3.3.7 Surface preparation associated with medical device and pharmaceutical manufacturing;

8.3.3.8 Cleaning associated with performance or quality assurance testing of coatings, inks, or adhesives involved;

8.3.3.9 Non-manufacturing area cleaning, and

8.3.3.10 The use of any surface preparation solvent or cleanup solvent subject to 4.0 of 7 **DE Admin. Code** 1141.

8.4 Work Practice Standards.

8.~~1~~4.1 No owner or operator of a facility subject to 8.4 of this regulation may cause, allow, or permit the disposal of more than five kilograms (kg) (11 pounds [lb]) of any VOC, or of any materials containing more than five kg (11 lb) of any VOCs, at that facility in any one day in a manner that would permit the evaporation of VOC into the ambient air. This provision does not apply to:

8.~~1~~4.1.1 Any VOC or material containing VOC emitted from a regulated entity that is subject to a VOC standard under this regulation.

8.~~1~~4.1.2 Coating sources that are exempt from the emission limitations of 10.0 through 23.0 of this regulation.

8.~~1~~4.1.3 Waste paint (sludge) handling systems, water treatment systems, and other similar operations at coating facilities using complying coatings.

8.~~1~~4.1.4 Any VOC or material containing VOCs used during process maintenance turnarounds for cleaning purposes, provided that the provisions of 8.4.3, 8.4.4, ~~and~~ 8.4.5 and 8.4.6 of this regulation are followed.

8.~~1~~4.2 The requirements of 8.~~1~~4.1 of this regulation includes, but is not limited to, the disposal of VOC from VOC control devices.

8.~~1~~4.3 No owner or operator of a facility subject to 8.4 of this regulation shall use open containers for the storage or disposal of cloth or paper impregnated with VOCs ~~that are used for surface preparation,~~

~~cleanup, or coating removal~~. Containers for the storage or disposal of cloth or paper impregnated with VOCs shall be kept closed, except when adding or removing material.

8.~~1~~4.4 No owner or operator of a facility subject to 8.4 of this regulation shall store in open containers spent or fresh VOC ~~to be used for surface preparation, cleanup or coating removal~~ or VOC containing material. Containers for the storage of spent or fresh VOCs or VOC containing material shall be kept closed, except when adding or removing material.

8.~~1~~4.5 No owner or operator of a facility subject to 8.4 of this regulation shall use VOC for the cleanup of spray equipment unless ~~equipment is~~ one or more of the following methods are used to collect the cleaning compounds and to minimize their evaporation to the atmosphere.

8.4.5.1 Use of an enclosed spray gun cleaning system that is kept closed when not in use.

8.4.5.2 Non-atomized discharge of solvent into a waste container that is kept closed when not in use.

8.4.5.3 Disassembly of the spray gun and cleaning in a vat that is kept closed when not in use.

8.4.5.4 Atomized spray into a waste container that is fitted with a device that captures atomized solvent emissions.

8.4.5.5 Any alternative technique that has been demonstrated to, and accepted by the Department as producing emissions that are equal to or less than the emissions from the techniques specified in 8.4.5.1 through 8.4.5.4 of this regulation. Emissions from any alternative technique shall be demonstrated pursuant to test protocols that are approved in advance by the Department.

8.4.6 Any owner or operator of a facility subject to 8.4 of this regulation shall:

8.4.6.1 Convey VOC-containing cleaning materials from one location to another in closed containers or pipes.

8.4.6.2 Handle and transfer all fresh and spent cleaning solvent and other VOC-containing material to or from any container, tank, vat, vessel, mixing vessel, or piping system, etc. in such a manner that minimizes spills and other losses.

8.4.6.3 Clean up spills of fresh and spent cleaning solvent and other VOC-containing material immediately.

8.4.7 Any owner or operator of a facility subject to 8.4 of this regulation shall minimize air circulation around cleaning operations and shall implement equipment practices that minimize emissions including keeping part cleaners covered when not in use, and maintaining cleaning equipment to repair solvent leaks.

8.5 Control Requirements. No owner or operator of a facility subject to 8.5 of this regulation shall use any liquid VOC containing material for any solvent cleaning operation that does not meet one of the requirements of 8.5.1 through 8.5.3.

8.5.1 The VOC content is equal to or less than 50 grams VOC per liter (0.42 1b/gal), as applied, or

8.5.2 The VOC composite vapor pressure is equal to or less than 8 millimeters of mercury (mmHg) at 20 degrees Celsius, as applied, or

8.5.3 The emissions of that material are controlled by an emission control system that:

8.5.3.1 Achieves an overall control efficiency of equal to or greater than 85 percent, by weight, or

8.5.3.2 Maintains a maximum outlet total organic carbon concentration of 20 parts per million by volume (ppmv) as carbon (C1) on a dry basis.

8.6 Test Methods and Procedures.

8.6.1 Any owner or operator subject to 8.5.1 of this regulation shall determine the VOC content of each cleaning solution using the test methods and procedures specified in Appendix A and Appendix B of this regulation, or using the manufacturer's product formulation data, and the following equation:

VOC Content (in grams per liter of material) = (WS -WW -Wes)/Vm

(8-1)

Where:

WS = Weight of volatile compounds in grams(g);

WW = Weight of water, in g;

Wes = Weight of exempt compounds in g;

Vm = Volume of material in liters

8.6.2 Any owner or operator subject to 8.5.2 of this regulation shall determine the VOC composite vapor pressure of each cleaning solution using the test methods and procedures specified in Appendix A and Appendix B of this regulation, or using the manufacturer's product formulation data, and the following equation:

$$PP_C = \sum_{i=1}^{n} \frac{\frac{(W_i)(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

(8-2)

Where:

Wi = Weight of the ith VOC compound, in grams (g);

Ww = Weight of water, in g;

We = Weight of exempt compound, in g;

MWi = Molecular weight of the ith VOC compound, in grams per gram-mole

MWw = Molecular weight of water, in grams per gram-mole

MWe = Molecular weight of exempt compound, in grams per gram-mole;

PPC = VOC composite partial pressure at 20°C, in mmHg

VPi = Vapor pressure of the ith VOC compound at 20°C, in mmHg

8.6.3 Any owner or operator subject to 8.5.3 of this regulation shall conduct an initial test to demonstrate the efficiency of each emission control system using the applicable test methods and procedures specified in Appendix A through Appendix E of this regulation. The cleaning operation shall operate at maximum operating conditions and flow rates during any emission testing.

8.7 Recordkeeping. Any owner or operator subject to 8.5 of this regulation shall maintain all of the information necessary for the Department to determine compliance with the applicable requirements of Section 8.5 of this regulation. Such information shall be made available to the Department upon verbal or written request, and shall be maintained for a minimum of five years from the date such record is created. Information sufficient to determine compliance shall include, but is not limited to the following:

8.7.1 Name and quantity of each cleaning solvent used,

8.7.2 VOC content or vapor pressure of each cleaning solvent, as applied,

8.7.3 Material Safety Data Sheets for all cleaning solvents used,

8.7.4 Documentation of air pollution control equipment efficiency or capture efficiency, if applicable,

8.7.5 Date and type of maintenance performed on air pollution control or capture equipment, if applicable, and

8.7.6 Quantity of non-compliant solvent used, in gallons, for each day, each week, and calendar year.

(Break in Continuity of Sections)

13.0 Automobile and Light-Duty Truck Coating Operations

~~01/11/1993~~ mm/dd/2010

13.1 Applicability

13.1.1 The provisions of 13.0 of this regulation apply to the following coating operations in an automobile or light-duty truck assembly plant: each prime coat operation, each electro-deposition (EDP) prime coat operation, each primer surfacer operation, each topcoat operation, ~~and~~ each combined primer surfacer and topcoat operation, each final repair operation and each miscellaneous motor vehicle materials operation.

13.1.2 The requirements in 13.3.~~4~~1 and 13.6 and 13.9 of this regulation also apply to heavy-duty trucks that use EDP to apply prime coat.

13.1.3 Anti-chip coatings, as applied to automobile and light-duty truck components such as, but not limited to, rocker panels, the bottom edge of doors and fenders, and the leading edge of the hood or roof, are considered primer surfacers.

13.1.4 Application to metal parts of underbody anti-chip coatings (e.g., underbody plastisol) and coatings other than prime, primer-surfacer, topcoat, ~~and~~ final repair and miscellaneous motor vehicle materials shall be subject to the requirements of 22.0 of this regulation (Miscellaneous Metal Parts).

13.1.5 The requirements in 13.3 of this regulation do not apply to automobile and light-duty truck assembly plants whose plant-wide, actual emissions without control devices are less than 6.8 kilograms (kg) (15 pounds [lb]) of volatile organic compounds (VOCs) per day.

13.1.6 An owner or operator of a facility whose emissions are below the applicability threshold in 13.1.5 of this regulation shall comply with the certification, recordkeeping, and reporting requirements in 4.2 of this regulation.

13.1.7 Any facility that becomes or is currently subject to all of the provisions of 13.0 of this regulation by exceeding the applicability threshold in 13.1.5 of this regulation will remain subject to these provisions even if its emissions later fall below the applicability threshold.

13.1.8 Any facility that is currently subject to a state or federal rule promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and will remain subject to these provisions, even if its throughput or emissions later fall below the applicability threshold.

13.1.9 Transition period for existing permitted sources. Every owner or operator of any automobile or light-duty truck assembly plant that has a permit issued pursuant to 7 **DE Admin. Code** 1102 or 1130 containing all applicable conditions of 13.0 of this regulation, as that regulation existed on January 11, 1993, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011, every such owner or operator shall comply with the provisions of 13.0 of this regulation.

13.2 Definitions. As used in 13.0 of this regulation, all terms not defined herein shall have the meaning given them in this regulation or in the Clean Air Act Amendments (CAAA) of November 15, 1990, or in 2.0 of this regulation.

"**Adhesive**" means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

"**Application area**" means the area where a coating is applied by dipping or spraying.

"**Automobile**" means a motor vehicle capable of carrying no more than 12 passengers.

"**Automobile and light-duty truck adhesive**" means an adhesive, including glass bonding adhesive, used at an automobile or light-duty truck assembly coating facility, applied for the purpose of bonding two vehicle surfaces together without regard to the substrates involved.

"**Automobile and light-duty truck bedliner**" means a multi-component coating, used at an automobile or light-duty truck assembly coating facility, applied to a cargo bed after the application of topcoat and outside of the topcoat operation to provide additional durability and chip resistance.

"**Automobile and light-duty truck body**" means the exterior and interior surfaces of an automobile or light-duty truck including, but not limited to, hoods, fenders, cargo boxes, doors, grill opening panels, engine compartment, all or portions of the passenger compartment, and trunk interior.

"**Automobile and light-duty truck cavity wax**" means a coating, used at an automobile or light-duty truck assembly coating facility, applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

"**Automobile and light-duty truck deadener**" means a coating, used at an automobile or light-duty truck assembly coating facility, applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

"**Automobile and light-duty truck gasket/gasket sealing material**" means a fluid, used at an automobile or light-duty truck assembly coating facility, applied to coat a gasket or replace and perform the same function as a gasket. Automobile and light-duty truck gasket/gasket sealing material includes room temperature vulcanization (RTV) seal material.

"**Automobile and light-duty truck glass bonding primer**" means a primer, used at an automobile or light-duty truck assembly coating facility, applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass. Automobile and light-duty truck glass bonding primer includes glass bonding/ cleaning primers that perform both functions (cleaning and priming of the windshield and other glass, or body openings) prior to the application of adhesive or the installation of adhesive bonded glass.

"**Automobile and light-duty truck lubricating wax/compound**" means a protective lubricating material, used at an automobile or light-duty truck assembly coating facility, applied to vehicle hubs and hinges.

"**Automobile and light-duty truck sealer**" means a high viscosity material, used at an automobile or light-duty truck assembly coating facility, generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (e.g. primer-surfacer). The primary purpose of the automobile and light-duty truck sealer is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the compartment. Such materials are also referred to as sealant or caulk.

"**Automobile and light-duty truck trunk interior coating**" means a coating, used at an automobile or light-duty truck assembly coating facility outside of the primer-surfacer and topcoat operations, applied to the trunk interior to provide chip protection.

"**Automobile and light-duty truck underbody coating**" means a coating, used at an automobile or light-duty truck assembly coating facility, applied to the undercarriage or firewall to prevent corrosion and/or provide chip protection.

"**Automobile and light-duty truck weatherstrip adhesive**" means an adhesive, used at an automobile or light-duty truck assembly coating facility, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

"**Electro-deposition (EDP)**" means a ~~method~~ process of applying a protective, corrosion resistant waterborne prime coat by which the automobile or truck body is submerged in a tank filled with coating material and an electrical field is used to effect the deposition of the coating material on the body. Also referred to as E-Coat, Uni-Prime, and ELPO Primer.

"**EDP prime coat operation**" means the application area or areas, flashoff area or areas, and oven or ovens that are used to apply and dry or cure the EDP prime coat on components of automobile and truck bodies on a single assembly line.

"**Final repair operation**" means the ~~application area or areas, flashoff area or areas, and oven or ovens used to apply and dry or cure coatings that are used to repair topcoat on fully assembled automobiles or light-duty truck bodies from a single assembly line.~~ operations performed and coating applied to completely assembled motor vehicles or to parts that are not yet on a completely assembled vehicle to correct damage or imperfections in the coating. The curing of the coatings applied in these operations is accomplished at a lower temperature than used for curing primer-surfacer and topcoat. This lower temperature cure avoids the need to send parts that are not yet on a completely assembled vehicle through the same type of curing process used for primer-surfacer and topcoat and is necessary to protect heat sensitive components on completely assembled vehicles.

"**In-line Repair**" means the operation performed and coating used to correct damage or imperfections in the topcoat on parts that are on a completely assembled vehicle. The curing of the coatings applied

in these operations is accomplished at essentially the same temperature as that used for curing the previously applied topcoat. Also referred to as high bake repair or high bake reprocess. In-line repair is considered part of the topcoat operation.

"**Light-duty truck**" means any motor vehicle rated at 3,864 kg (8,500 lb) gross weight or less designed primarily to transport property.

"**Prime coat operation**" means the application area or areas, flashoff area or areas, and oven or ovens that are used to apply and dry or cure the prime coat on components of automobile and light-duty truck bodies on a single assembly line.

"**Primer-surfacer operation**" means the application area or areas, flashoff area or areas, and oven or ovens that are used to apply and dry or cure primer surfacer between the prime coat and the topcoat operations on components of automobile and light-duty truck bodies on a single assembly line. ~~The primer surfacer coat is also referred to as the "guidecoat."~~

"**Primer-surfacer**" means an intermediate protective coating applied over the electrodeposition primer and under the topcoat. Primer-surfacer provides adhesion, protection and appearance properties to the total finish. Primer-surfacer may also be called guide coat or surfacer. Primer-surfacer operations may include other coatings (e.g., anti-chip, lower-body anti-chip, chip resistant edge primer, spot primer, blackout, deadener, interior color, basecoat replacement coating, etc) that are applied in the same spray booth.

"**Primer-surfacer and topcoat protocol**" means the EPA document "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations", EPA 453/R-08-002, September 2008.

"**Solids turnover ratio ~~(RT)~~ (R_T)**" means the ratio of total volume of coating solids that is added to the EDP system in a calendar month divided by the total volume design capacity of the EDP system.

"**Topcoat**" means the final coating ~~or coatings on components of automobile and light-duty truck bodies~~ applied to provide the final color and/or a protective finish. The topcoat may be a monocoat color or basecoat/clearcoat system. In-line repair and two-tone are part of topcoat. Topcoat operations may include other coatings (e.g., blackout, interior color, etc.) that are applied in the same spray booth.

"Topcoat operation" means the application area or areas, flashoff area or areas, and oven or ovens used to apply and dry or cure topcoat on components of automobile and light-duty truck bodies on a single assembly line.

~~"**Topcoat protocol**" means the EPA document "Protocol for Determining the Daily VOC Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA-450/3-88-018, December 1988.~~

"**Volume design capacity**" means for the EDP system the total liquid volume that is contained in the EDP system (tanks, pumps, recirculating lines, filters, etc.) at the system's designed liquid operating level. The EDP system volume design capacity is designated ~~LE~~ L_E.

13.3 Standards

13.3.~~4~~1 No owner or operator of an EDP prime coat operation subject to 13.0 of this regulation shall cause or allow on any day the application of any coating on that operation with VOC content, as applied, that exceeds either of the following:

13.3.~~4~~1.1 ~~0.17 kg/L (1.4 lb/gal)~~ 0.084 kg/l (0.7 lb/gal) of coating solids from any EDP prime coat operation when the solids turnover ratio (R_T) is 0.16 or greater. R_T shall be calculated as follows:

$$R_T = \frac{T_V}{L_E}$$

(13-1)

where:

T_V =Total volume of coating solids that is added to the EDP system in a calendar month (liters).

L_E = Volume design capacity of the EDP system (liters).

13.3.~~4~~1.2 ~~0.17 x 350 (0.160 - R_T)~~ 0.084 x 350 (0.160-R_T) kg VOC/~~L~~l of applied coating solids from any EDP prime coat operation when R_T, calculated according to the equation in ~~13.3.4.1~~ 13.1 of this regulation, is greater than or equal to 0.040 and less than 0.160.

13.3.~~4~~1.3 When R_T, calculated according to the equation in ~~13.3.4.1~~ 13.1 of this regulation, is less than 0.040 for any EDP prime coat operation, there is no emission limit.

13.3.~~3~~2 No owner or operator of an automobile or light-duty truck primer surface operation subject to 13.0 of this regulation shall cause or allow ~~on any day~~ VOC emissions which do not comply with ~~one of the following:~~ 1.44 kg VOC/liter of deposited solids (12.0 lb VOC/gal deposited solids) on a daily weighted average basis as determined by 13.6.2.

~~13.3.3.1 1.8 kg/L (15.1 lb/gal) of solids deposited.~~

~~13.3.3.2 0.34 kg/L (2.8 lb/gal) of coating, excluding water and exempt compounds, as applied.~~

13.3.~~2~~3 No owner or operator of an automobile or light-duty truck topcoating operation subject to 13.0 of this regulation shall cause or allow ~~on any day~~ VOC emissions that do not comply with ~~one of the following:~~ 1.44 kg VOC/liter of deposited solids (12.0 lb VOC/gal deposited solids) on a daily weighted average basis as determined by 13.6.2.

~~13.3.2.1 1.8 kg/L (15.1 lb/gal) of solids deposited.~~

~~13.3.2.2 0.34 kg/L (2.8 lb/gal) of coating, excluding water and exempt compounds, as applied.~~

13.3.~~1~~4 No owner or operator of an automobile or light-duty truck prime coat operation or final repair operation subject to 13.0 of this regulation shall cause or allow ~~on any day~~ the application of any coating on that operation with VOC content, as applied, that does not comply with one of the following: ~~emission limits~~

13.3.~~1~~4.1 0.14 kilograms per liter (kg/~~L~~l) (1.2 pounds per gallon [lb/gal]) of coating, excluding water and exempt compounds, as applied, from any prime coat operation.

13.3.~~1~~4.2 0.58 kg/~~L~~l) (4.8 lb/gal) of coating, excluding water and exempt compounds, as applied, from any final repair operation.

13.3.~~1~~4.3 4.10 kg/~~L~~l) (34.2 lb/gal) of solids deposited from any final repair operation.

13.3.5 No owner or operator of an automobile or light-duty truck combined primer-surfacer and topcoat operation subject to 13.0 of this regulation shall cause of allow VOC emissions that do not comply with 1.44 kg VOC/liter of deposited solids (12.0 lb VOC/gal deposited solids) on a daily weighted average basis as determined by 13.6.2.

13.3.6 Additional VOC content limits for miscellaneous motor vehicle materials used at automotive and light-duty truck assembly facilities (grams of VOC per liter of coating excluding water and exempt compounds, as applied).

Table 13-1

Coating Category	VOC REGULATORY AS APPLIED (g/l)
Automobile and light-duty truck adhesive	250
Automotive and light-duty truck bedliner	200
Automotive and light-duty truck cavity wax	650
Automotive and light-duty truck deadener	650
Automotive and light-duty truck gasket/gasket sealing material	200
Automotive and light-duty truck glass bonding primer	900
Automotive and light-duty truck lubricating wax/compound	700
Automotive and light-duty truck sealer	650
Automotive and light-duty truck trunk interior coating	650
Automotive and light-duty truck underbody coating	430
Automotive and light-duty truck weatherstrip adhesive	750

13.3.7 The VOC emission limits in 13.3 of this regulation do not apply to materials supplied in containers with a net volume of 16 ounces or less or a net weight of one pound or less.

13.3.~~5~~8 As an alternative to compliance with the emission limits ~~in 13.3.1.1, 13.3.1.2, 13.3.2.2 and 13.3.3.2~~ of this regulation, an owner or operator may meet the requirements of 13.4 or 13.5 of this regulation.

13.4 Daily-weighted average limitation. No owner or operator subject to 13.0 of this regulation shall apply, during any day, coatings in any non-electro-deposition (non-EDP) prime coat, final repair, ~~topcoat, or primer surfacer~~ or miscellaneous motor vehicle materials operation whose daily-weighted average VOC content, calculated in accordance with the procedure specified in **Appendix C** of this regulation, exceeds the applicable emission limits in 13.3.~~1~~4, ~~13.3.2.2~~ and 13.3.~~3.2~~6 of this regulation.

13.5 Control devices

13.5.1 An owner or operator subject to 13.0 of this regulation ~~shall~~ may comply with the applicable emission limits for any ~~non-EDP prime coat, final repair, topcoat, or primer surfacer~~ coating operation by:

13.5.1.1 Installing and operating a capture system on that operation.

13.5.1.2 Installing and operating a control device on that operation.

13.5.1.3 Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in ~~3.0~~ 3.1 and 3.2 of **Appendix C** of this regulation for that day or 95%.

13.5.1.4 Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in ~~3.0 of~~ **Appendix D** of this regulation, is greater than or equal to the overall emission reduction efficiency required for that day.

13.5.2 An owner or operator subject to 13.0 of this regulation shall ensure that:

13.5.2.1 A capture system and control device are operated at all times the coating operation is in use, and the owner or operator demonstrates compliance with 13.0 of this regulation through the applicable coating analysis and capture system and control device efficiency test methods specified in **Appendix B**, **Appendix D** and **Appendix E** of this regulation and in accordance with the capture efficiency test methods in **Appendix D** of this regulation.

13.5.2.2 The control device is equipped with the applicable monitoring equipment specified in ~~2.0 of~~ **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated,

operated, and maintained according to the vendor's specifications at all times the control device is in use.

13.6 Compliance procedures for EDP prime coat operations

13.6.1 The owner or operator of an EDP prime coat operation subject to 13.0 of this regulation shall use the procedures in 40 CFR 60.393(c)(1) (July 1, ~~1992~~ 2009) to determine compliance if a capture system and a control device are not used to comply with the emission limits in 13.3.~~4~~1.1 or 13.3.~~4~~1.2 of this regulation.

13.6.2 The owner or operator of an EDP prime coat operation subject to 13.0 of this regulation shall use the procedures in 40 CFR 60.393(c)(2) (July 1, ~~1992~~ 2009) to determine compliance if a capture system and a control device that destroys VOC (e.g., incinerator) are used to comply with the emission limits in 13.3.~~4~~1.1 or 13.3.~~4~~1.2 of this regulation.

13.6.3 The owner or operator of an EDP prime coat operation subject to 13.0 of this regulation shall use the procedures in 40 CFR 60.393(c)(3) (July 1, ~~1992~~ 2009) to determine compliance if a capture system and a control device that recovers the VOC (e.g., carbon adsorber) are used to comply with the emission limits in 13.3.~~4~~1.1 or 13.3.~~4~~1.2 of this regulation.

13.7 Test methods

13.7.1 The test methods found in **Appendix A** through **Appendix D** of this regulation shall be used to determine compliance with ~~13.3.1, 13.3.2.2,~~ 13.3.~~3.2~~4.1 ~~and~~ 13.3.~~5~~4.2, 13.3.6 and 13.3.7 of this regulation.

13.7.2 An owner or operator shall use the primer-surfacer and topcoat protocol to determine compliance with 13.3.~~1.3~~2, 13.3.~~2.1~~3 and 13.3.~~3.1~~5 of this regulation. This protocol "Protocol for Determining the Daily Volatile Organic compound Emission Rate of Automobile and Light-duty Truck Primer-Surfacer and Topcoat Operations" EPA453/R-08-002, September 2008 can be found at www.epa.gov/ttn/oarpg/t1/ctg/autotruck_primer_topcoat_protocol_093008.pdf.

13.8 Recordkeeping and reporting for non-EDP prime coat, ~~and~~ final repair and miscellaneous motor vehicle materials coating operations.

13.8.1 An owner or operator of an automobile or light-duty truck coating operation that is exempt from the emission limitations in 13.3.~~1~~4.1, 13.3.4.2 and 13.3.6 of this regulation shall comply with the certification, recordkeeping, and reporting requirements in 4.2 of this regulation.

13.8.2 An owner or operator of an automobile or light-duty truck coating operation subject to 13.0 of this regulation and complying with 13.3.~~1~~4.1, 13.3.4.2 and 13.3.6 of this regulation by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in 4.3 of this regulation.

13.8.3 An owner or operator of an automobile or light-duty truck coating operation subject to 13.0 of this regulation and complying with 13.3.~~1~~4.1, 13.3.4.2 and 13.3.6 of this regulation by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in 4.4 of this regulation.

13.8.4 An owner or operator of an automobile or light-duty truck coating operation subject 13.0 of this regulation and complying with 13.3.~~1~~4.1, 13.3.4.2 and 13.3.6 of this regulation by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in 4.5 of this regulation.

13.9 Recordkeeping and reporting for EDP prime coat operations. An owner or operator of an EDP prime coat operation subject to 13.0 of this regulation and complying with the requirements in 13.3.~~4~~1.1, 13.3.~~4~~1.2 and 13.3.~~4~~1.3 of this regulation shall comply with the following:

13.9.1 Certification. By November 15, 1993 or upon startup of a new EDP prime coat operation, the owner or operator shall certify to the Department that the coating operation is and will be in compliance with the requirements in 13.3.~~4~~1.1 or 13.3.~~4~~1.2 of this regulation on and after November 15, 1993, or on and after the initial startup date. Such certification shall include:

13.9.1.1 The name and location of the facility.

13.9.1.2 The address and telephone number of the person responsible for the facility.

13.9.1.3 Identification of subject sources.

13.9.1.4 A copy of the calculations performed to determine R_T and the calculations performed pursuant to 13.6 of this regulation to demonstrate compliance for the EDP prime coat operation for the month prior to submittal of the certification.

13.9.2 Recordkeeping. On and after November 15, 1993 or on and after the initial startup date of a new EDP prime coat operation, the owner or operator shall collect and record the following information for each EDP prime coat operation. These records shall be maintained at the facility for at least five years and shall be made available to the Department upon verbal or written request:

13.9.2.1 For each day, the total daily volume of coating solids that is added to the EDP system.

13.9.2.2 For each month, calculation of R_T using the equation in 13.3.~~4~~1.1 of this regulation.

13.9.2.3 For each month, the calculations used in the compliance determinations specified in 13.6 of this regulation.

13.9.3 Reporting. On and after November 15, 1993, the owner or operator of an EDP prime coat operation subject to 13.0 of this regulation shall notify the Department in either of the following instances:

13.9.3.1 Any record showing noncompliance with the appropriate emission limit for the EDP prime coat operation.

13.9.3.2 At least 30 calendar days before changing the method of compliance from one of the procedures in 13.6 of this regulation to another of the procedures in 13.6 of this regulation, the owner or operator shall comply with the certification requirements in 13.9.1 of this regulation.

13.10 Reporting and recordkeeping for topcoat and primer surfacer operations.

13.10.1 An owner or operator of an automobile or light-duty truck coating operation subject to 13.0 of this regulation and complying with 13.3.~~1.3~~5, 13.3.~~2.1~~4 or 13.3.3~~.1~~ of this regulation shall comply with the following:

13.10.1.1 Certification. At least 120 days prior to the initial compliance date, the owner or operator of a coating operation subject to the topcoat and primer surfacer limit in 13.3.~~1.3~~5, 13.3.~~2.1~~4 or 13.3.3~~.1~~ of this regulation shall submit to the Department a detailed proposal specifying the method of demonstrating how the compliance test will be conducted according to ~~the topcoat protocol~~ 13.7.2. The proposal shall include a comprehensive plan (including a rationale) for determining the transfer efficiency at each booth through the use of in-plant or pilot testing; the selection of coatings to be tested (for the purpose of determining transfer efficiency), including the rationale for coating groupings; and a method for tracking coating usage during the transfer efficiency test. Upon approval by the Department, the owner or operator may proceed with the compliance demonstration.

13.10.1.2 Recordkeeping

13.10.1.2.1 The owner or operator shall maintain at the facility for a period of 5 years all test results, data, and calculations used to determine VOC emissions from each topcoat and each primer surfacer operation according to the topcoat protocol.

13.10.1.2.2 If control devices are used to control emissions from an automobile or light-duty truck topcoat or primer surfacer operation, the owner or operator shall maintain records according to 4.5.2.6 through 4.5.2.11 of this regulation.

13.10.1.2.3 Reporting. Any instance of noncompliance with the emission limit in 13.3.~~1.3~~5, 13.3.~~2.1~~4 or 13.3.3~~.1~~ of this regulation shall be reported to the Department within 45 calendar days.

~~13.10.2 An owner or operator of an automobile or light-duty truck coating operation subject to 13.0 of this regulation and complying with 13.3.2.2 and 13.3.3.2 of this regulation by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in 4.3 of this regulation.~~

~~13.10.3 An owner or operator of an automobile or light-duty truck coating operation subject to 13.0 of this regulation and complying with 13.3.2.2 and 13.3.3.2 of this regulation by daily weighted~~

~~averaging shall comply with the certification, recordkeeping, and reporting requirements in 4.4 of this regulation.~~

~~13.10.4 An owner or operator of an automobile or light duty truck coating operation subject to 13.0 of this regulation and complying with 13.3.2.2 and 13.3.3.2 of this regulation by the use of control devices shall comply with the testing, reporting and recordkeeping requirements 4.5 of this regulation.~~

(Break in Continuity of Sections)

16.0 Paper, Film, and Foil Coating

~~01/11/1993~~ mm/dd/2010

16.1 Applicability

16.1.1 The provisions of 16.0 of this regulation apply to any paper, film, or foil coating unit.

16.1.2 The provisions of 16.0 of this regulation do not apply to any paper, film, or foil coating unit within a facility whose actual emissions (including related cleaning activities) without control devices from all paper, film, or foil coating units within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) of volatile organic compounds (VOCs) per day.

16.1.3 An owner or operator of a facility whose emissions are below the applicability threshold in 16.1.2 of this regulation shall comply with the certification, recordkeeping, and reporting requirements of 16.7.1 of this regulation.

16.1.4 Any facility that becomes or is currently subject to the provisions of 16.0 of this regulation by exceeding the applicability threshold in 16.1.2 of this regulation will remain subject to these provisions even if its emissions later fall below the applicability threshold.

16.1.5 Any facility that is currently subject to a state or federal rule promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and will remain subject to these provisions, even if its throughput or emissions have fallen or later fall below the applicability threshold.

16.1.6 The provisions of 16.0 of this regulation does not apply to any coating unit in-line with any offset lithographic, screen, letterpress, flexographic, rotogravure, or digital printing operation. Such coating units may be subject to 37.0 or 47.0 of this regulation, whichever is applicable.

16.1.7 Transition period for existing permitted sources. Every owner or operator of any paper coating unit that is subject to a permit issued pursuant to 7 **DE Admin. Code** 1102 or 1130 containing all applicable conditions of 16.0 of this regulation, as that regulation existed on January 11, 1993, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011, every such owner or operator of any paper coating unit shall comply with the provisions of 16.0 of this regulation.

16.2 Definitions. As used in 16.0 of this regulation, all terms not defined herein shall have the meaning given them in the November 15, 1990 Clean Air Act Amendments (CAAA), or in 2.0 of this regulation.

"**Coating**" means a material being applied, or an action of applying such a material, onto or impregnated into a substrate for decorative, protective, or functional purpose.

"**Paper, film, or foil coating line**" means ~~a web coating line where coating is applied to paper~~ a series of coating applicators, flash-off areas, and any associated curing/drying equipment between one or more unwind/feed stations and one or more rewind/cutting stations to apply a coating onto a continuous strip of substrate (a web). Printing presses are not considered ~~paper~~ coating lines. Products produced on a paper, film, or foil coating line include, but are not limited to, adhesive tapes and labels, book covers, post cards, office copier paper, drafting paper, and pressure sensitive tapes and labels. ~~Paper c~~Coating lines include, but are not limited to, application by impregnation or saturation or by the use of roll, knife, or rotogravure coating. A coating line may include more than one coating unit.

"**Paper, film, or foil coating unit**" means ~~a coating application station and its associated flashoff area, drying area, or oven wherein coating is applied and dried or cured on a paper coating line. A paper~~

~~coating line may include more than one paper coating unit~~ any coating unit applying a coating to paper, film, or foil substrates used in the manufacturing of several major product types for the following industry sectors: pressure sensitive tape and labels (including fabric coated for use in pressure sensitive tapes and labels); photographic film; industrial and decorative laminates; abrasive products (including fabric coated for use in abrasive products) and flexible packaging (including coating of non-woven polymer substrates for use in flexible packaging). Paper, film, or foil coating unit also includes a coating unit applying a coating during miscellaneous coating operations for several products including: corrugated and solid fiber boxes; die-cut paper paperboard, and cardboard; converted paper and paperboard not elsewhere classified; folding paperboard boxes, including sanitary boxes; manifold business forms and related products; plastic aseptic packaging; and carbon paper and inked ribbons.

16.3 Standards. No owner or operator of any paper, film, or foil coating unit shall operate the coating unit unless the owner or operator meets the applicable requirements listed under 16.3.1, 16.3.2, 16.3.3, and 16.3.4 of this regulation.

16.3.1 Except as specified in 16.3.2 of this regulation, ~~N~~no ~~owner or operator of a paper coating unit subject to 16.0 of this regulation shall cause, allow, or permit the~~ application of any coating on that unit with VOC content in excess of ~~0.35 kilograms per liter (kg/L) (2.9 pounds per gallon [lb/gal]) of coating, excluding water and exempt compounds, as applied~~ 0.40 kilogram VOC per kilogram of solid applied (kg/kg) (0.40 pound of VOC per pound of solid [lb/lb]).

16.3.2 For pressure sensitive tape and label surface coating, no application of any coating on that unit with VOC content in excess of 0.20 kilogram VOC per kilogram of solid applied (kg/kg) (0.20 pound of VOC per pound of solid [lb/lb]).

16.3.~~2~~3 As an alternative to compliance with the emission limit in 16.3.1 or 16.3.2 of this regulation, an owner or operator of a paper, film, or foil coating unit ~~subject to 16.0 of this regulation~~ may meet the requirements of 16.4 or 16.5 of this regulation.

16.3.4 When handling cleaning materials, an owner or operator of a paper, film, or foil coating unit shall comply with 8.0 of this regulation.

16.4 Daily-weighted average limitation. No owner or operator of a paper, film, or foil coating unit subject to 16.0 of this regulation shall apply, during any day, coatings on that unit whose daily-weighted average VOC content, calculated in accordance with the procedure specified in **Appendix C** of this regulation, exceeds the emission limit in 16.3.1 or 16.3.2 of this regulation, whichever is applicable.

16.5 Control devices

16.5.1 An owner or operator of a paper, film, or foil coating unit subject to 16.0 of this regulation may comply with 16.0 of this regulation by:

16.5.1.1 Installing and operating a capture system on that unit.

16.5.1.2 Installing and operating a control device on that unit.

16.5.1.3 Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in 3.0 of **Appendix C** of this regulation for that day or 95%. If the calculated efficiency is less than 90%, use 90% as the needed efficiency.

16.5.1.4 Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in 3.0 of **Appendix D** of this regulation, is greater than or equal to the overall emission reduction efficiency ~~required~~ needed for that day as determined in 16.5.1.3 of this regulation.

16.5.2 An owner or operator of a paper, film, or foil coating unit subject to 16.0 of this regulation shall ensure that:

16.5.2.1 A capture system and control device are operated at all times the coating unit is in operation, and the owner or operator demonstrates compliance with 16.0 of this regulation through the applicable coating analysis and capture system and control device efficiency test methods specified in **Appendix B**, **Appendix D** and **Appendix E** of this regulation and in accordance with the capture efficiency test methods in **Appendix D** of this regulation.

16.5.2.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

16.6 Test methods. The test methods found in **Appendix A** through **Appendix D** of this regulation shall be used to determine compliance with 16.0 of this regulation.

16.7 Recordkeeping and reporting

16.7.1 An owner or operator of a paper, film, or foil coating unit that is exempt from the emission limitations in 16.3 of this regulation shall comply with the certification requirements in 4.2 of this regulation within six months after [insert the effective date of this revision of 16.0], and with the recordkeeping and reporting requirements in 4.2 of this regulation on and after [insert the effective date of this revision of 16.0].

16.7.2 An owner or operator of a paper, film, or foil coating unit subject to 16.0 of this regulation and complying with 16.3 of this regulation by the use of complying coatings shall comply with the certification requirements in 4.3 of this regulation within six months after [insert the effective date of this revision of 16.0], and with the recordkeeping and reporting requirements in 4.3 of this regulation on and after [insert the effective date of this revision of 16.0].

16.7.3 An owner or operator of a paper, film, or foil coating unit subject to 16.0 of this regulation and complying with 16.4 of this regulation by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in 4.4 of this regulation.

16.7.4 An owner or operator of a paper, film, or foil coating unit subject to 16.0 of this regulation and complying with 16.5 of this regulation by the use of control devices shall comply with the testing requirements in 4.5 of this regulation within six months after [insert the effective date of this revision of 16.0], and with the reporting and recordkeeping requirements in 4.5 of this regulation on and after [insert the effective date of this revision of 16.0].

(Break in Continuity of Sections)

23.0 Coating of Flat Wood Panelling

~~01/11/1993~~ mm/dd/2010

23.1 Applicability

23.1.1 The provisions of 23.0 of this regulation apply to any flat wood paneling coating line, except as specified in 23.1.2 of this regulation.

23.1.2 The provisions of 23.0 of this regulation do not apply to~~:~~

~~23.1.2.1~~ ~~A~~any flat wood paneling coating line within any facility whose actual emissions without control devices from all flat wood paneling coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) of volatile organic compounds (VOCs) per day.

~~23.1.2.2 Class I hardboard paneling finishes, particle board used in furniture, insulation board, exterior siding, tileboard, and softwood plywood coating lines.~~

23.1.3 An owner or operator of a facility whose emissions are below the applicability threshold in 23.1.2.1 of this regulation shall comply with the certification, recordkeeping, and reporting requirements of 23.7.1 of this regulation.

23.1.4 Any facility that becomes or is currently subject to the provisions of 23.0 of this regulation by exceeding the applicability threshold in 23.1.2.1 of this regulation will remain subject to these provisions even if its emissions later fall below the applicability threshold.

23.1.5 Any facility that is currently subject to a state or federal rule promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and will remain subject to these provisions, even if its throughput or emissions have fallen or later fall below the applicability threshold.

23.2 Definitions. As used in 23.0 of this regulation, all terms not defined herein shall have the meaning given them in the November 15, 1990 Clean Air Act Amendments (CAAA), or in 2.0 of this regulation.

"**Class I hardboard paneling finish**" means finishes that meet the specifications for Class I of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

"**Class II hardboard paneling finish**" means finishes that meet the specifications for Class II of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

"**Exterior siding**" means wood panels with a flat surface made of solid wood, hardboard, or waferboard and are intended for use in commercial or residential construction, generally as a covering for an outside wall.

"**Flat wood paneling coating line**" means a coating line used to apply and dry or cure coatings applied to one of the following flat wood paneling product categories: printed interior panels made of hardwood plywood and thin particle board (i.e., less than or equal to 0.64 centimeter (cm) (0.25 inch [in.]) in thickness); natural finish hardwood plywood panels; and hardwood paneling with Class II finishes.

"**Hardboard**" is a panel manufactured primarily from inter-felted ligno-cellulosic fibers that are consolidated under heat and pressure in a hot press.

"**Hardwood plywood**" is plywood whose surface layer is a veneer of hardwood.

"**Natural finish hardwood plywood panels**" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

"**Printed interior panels**" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

"**Thin particleboard**" is a manufactured board that is 0.64 cm (0.25 in.) or less in thickness made of individual wood particles that have been coated with a binder and formed into flat sheets by pressure.

"**Tileboard**" means ~~paneling that has a colored, waterproof surface coating~~ paneling that meets the specifications for Class I hardboard given by the standard ANSI/AHA A135.4-1995 as approved by the American National Standards Institute. The standard specifies requirements and test methods for water absorption, thickness swelling, modulus of rupture, tensile strength, surface finish, dimensions, squareness, edge straightness, and moisture content for five classes of hardboard. Tileboard is also known as Class I hardboard or tempered hardboard.

23.3 Standards

23.3.1 No owner or operator of a flat wood paneling coating line subject to 23.0 of this regulation shall cause or allow, on any day, VOC emissions from the coating of any one of the following flat wood paneling product categories in excess of the emission limits in ~~23.3.1.1 though 23.3.1.2~~ Table 23-1 of this regulation:

~~Flat wood paneling product category~~		~~kg/100m^2 [a]~~	~~lb/1,000ft^2 [a]~~
~~23.3.1.1~~	~~Printed interior panels~~	~~2.9~~	~~6.0~~
~~23.3.1.2~~	~~Natural finish hardwood plywood panels~~	~~5.8~~	~~12.0~~
~~23.3.1.3~~	~~Class II finish on hardboard panels~~	~~4.8~~	~~10.0~~

~~[a] VOC content values are expressed in units of mass of VOC (kg, lb) per area of coated finished product (100 square meters [m^2], 1,000 square feet [ft^2])~~

Table 23-1. VOC Emission Limits from Flat Wood Paneling Coatings.

Flat Wood Paneling Product Category	VOC Content Limits in Coatings, Inks, or Adhesives Being Applied	
	lb/gal	g/L
Printed interior panels made of hardwood, plywood, or thin particleboard	2.1*	250

Natural finish hardwood plywood panels	2.1	250
Class II finishes on hardboard panels	2.1	250
Tileboard	2.1	250
Exterior siding	2.1	250

*This limit of 2.1 lb/gal is equivalent to 5.0 lb VOC per 1,000 ft^2 coating area.

23.3.2 As an alternative to compliance with the emission limits in 23.3.1 of this regulation, an owner or operator of a flat wood paneling coating line may meet the requirements of 23.5 of this regulation.

23.4 ~~[Reserved]~~ Work Practice Standards. No owner or operator of a flat wood paneling coating line subject to 23.0 of this regulation shall perform coating operation of any flat wood paneling category in Table 23-1 of this regulation unless the owner or operator meets the work practice requirements of 8.0 of this regulation.

23.5 Control devices

23.5.1 An owner or operator of a flat wood paneling coating line subject to 23.0 of this regulation may comply with 23.0 of this regulation by:

23.5.1.1 Installing and operating a capture system on that line.

23.5.1.2 Installing and operating a control device on that line.

23.5.1.3 Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the ~~lesser of the value calculated according to the procedure in 23.6.2 of this regulation for that day or 95%.~~ greater of:

23.5.1.3.1 lesser of the value calculated according to the procedure in 23.6.2 of this regulation for that day or 95%, or

23.5.1.3.2 90%.

23.5.1.4 Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in 5.0 of **Appendix D** of this regulation, is greater than or equal to the overall emission reduction efficiency ~~required~~ needed for that day as determined in 23.5.1.3 of this regulation.

23.5.2 An owner or operator of a flat wood paneling coating line subject to 23.0 of this regulation shall ensure that:

23.5.2.1 A capture system and control device are operated at all times that the line is in operation, and the owner or operator demonstrates compliance with 23.0 of this regulation through the applicable coating analysis and capture system and control device efficiency test methods specified in **Appendix B**, **Appendix D** and **Appendix E** of this regulation and in accordance with the capture efficiency test methods in **Appendix D** of this regulation.

23.5.2.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

23.6 Test Methods and Efficiency of Control System

23.6.1 ~~Test methods.~~ The test methods ~~found~~ specified in 23.6, ~~of this regulation and in~~ **Appendix A**, **Appendix B** and **Appendix D** of this regulation shall be used to determine compliance.

23.6.2 ~~Overall emission reduction efficiency for control systems.~~ The required overall emission reduction efficiency of the control system for the day shall be calculated according to the following equation:

$$E = \left[\frac{(VOC_a - S)}{VOC_a} \right] \times 100$$

(23-1)

where:

E = The required overall emission reduction efficiency of the control system for the day.

VOC_a = The maximum VOC content of the coatings, as applied, used each day on a coating line in units of ~~kg VOC/100 m^2 of coated finished product (lb VOC/1,000 ft^2),~~ lb VOC/gal of coating material applied (or kg VOC/L of coating material applied), as determined by the applicable test methods and procedures specified in **Appendix B** of this regulation.

S = applicable VOC emission limitation in Table 23-1 of this regulation in terms of ~~kg VOC/100 m^2 of coated finished product (lb VOC/1,000 ft^2)~~ lb VOC/gal of coating material applied (or kg VOC/L of coating material applied).

23.7 Recordkeeping and reporting

23.7.1 Requirements for coating sources exempt from emission limitations. An owner or operator of a flat wood paneling coating line that is exempt from the emission limitations of 23.3 of this regulation because combined VOC emissions on any day from all flat wood paneling coating lines at the facility are below the applicability threshold specified in 23.1.2~~.1~~ of this regulation, before the application of capture systems and control devices, shall comply with the following:

23.7.1.1 Certification. ~~By November 15, 1993,~~ Within six months after [insert the effective date of this revision of 23.0], the owner or operator of a facility ~~referenced~~ specified in 23.7.1 of this regulation shall certify to the Department that the facility is exempt by providing the following:

23.7.1.1.1 The name and location of the facility.

23.7.1.1.2 The address and telephone number of the person responsible for the facility.

23.7.1.1.3 A declaration that the facility is exempt from the emission limitations of 23.3 of this regulation because combined VOC emissions on any day from all flat wood paneling coating lines at the facility are below the applicability threshold before the application of capture systems and control devices. The following equation shall be used to calculate total VOC emissions for that day:

$$T = \sum_{i=1}^{n} C_i D_i a$$

(23-2)

where:

T = Total VOC emissions from coating lines at the facility for each category of flat wood paneling (as specified in 23.3.1 of this regulation) before the application of capture systems and control devices in units of kg VOC/day (lb VOC/day).

n = Number of different coatings applied on each coating line at the facility.

i = Subscript denoting an individual coating.

C = Mass of VOC per area of coated finished product in units of kg VOC/100 m^2 (lb VOC/1,000 ft^2).

D = The surface area coated at the facility each day in units of m^2/day (ft^2/day).

a = Constant = 100 m^2 if using metric units.

= 1,000 ft^2 if using English units.

23.7.1.2 Recordkeeping. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], the owner or operator of a facility ~~referenced~~ specified in 23.7.1 of this regulation shall collect and record all of the following information each day and maintain the information at the facility for a period of five years:

23.7.1.2.1 The name and identification number of each coating, as applied, used to coat each type of flat wood paneling product.

23.7.1.2.2 The volume of coating (i) (excluding water and exempt compounds), as applied, used each day to coat each type of flat wood paneling product (specified in 23.3.1 of this regulation), and the surface area coated each day of each type of flat wood paneling product.

23.7.1.2.3 The total VOC emissions at the facility, as calculated using the equation under 23.7.1.1.3 of this regulation.

23.7.1.3 Reporting. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], the owner or operator of a facility ~~referenced~~ specified in 23.7.1 of this regulation shall notify the Department of any record showing that combined VOC emissions from all coating lines at the coating facility exceed 6.8 kg (15 lb) on any day, before the application of capture systems and control devices. A copy of such record shall be sent to the Department within 45 calendar days after the exceedance occurs. This requirement is in addition to any other exceedance reporting requirements mandated by the State of Delaware.

23.7.2 Requirements for coating sources using complying coatings. An owner or operator of a flat wood paneling coating line subject to 23.0 of this regulation and complying with 23.3 of this regulation by means of the use of complying coatings shall comply with the following:

23.7.2.1 Certification. By ~~November 15, 1993~~ Within six months after [insert the effective date of this revision of 23.0], or upon startup of a new coating line, or upon changing the method of compliance for an existing coating line from control devices to the use of complying coatings, the owner or operator of a coating line ~~referenced~~ specified in 23.7.2 of this regulation shall certify to the Department that the coating line is or will be in compliance with the requirements of the applicable section of this regulation on and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], or on and after the initial startup date. Such certification shall include:

23.7.2.1.1 The name and location of the facility.

23.7.2.1.2 The address and telephone number of the person responsible for the facility.

23.7.2.1.3 Identification of subject sources.

23.7.2.1.4 The name and identification number of each coating, as applied, used to coat each type of flat wood paneling product.

23.7.2.1.5 ~~The mass of VOC per area of coated finished product~~ The VOC content of each coating for each type of flat wood paneling product (specified in 23.3.1 of this regulation) in terms of ~~kg VOC/100 m^2 (lb VOC/1,000 ft^2)~~ lb VOC/gal of coating material applied (or kg VOC/L of coating material applied) and the ~~surface area~~ volume of each coating (in terms of gal or L) coated each day of each type of flat wood paneling product.

23.7.2.2 Recordkeeping. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], or on and after the initial startup date, the owner or operator of a coating line referenced in 23.7.2 of this regulation and complying by the use of complying coatings shall collect and record all of the following information each day for each coating line and maintain the information at the facility for a period of five years:

23.7.2.2.1 The name and identification number of each coating, as applied, used to coat each type of flat wood paneling product.

23.7.2.2.2 ~~The mass of VOC per area of coated finished product~~ The VOC content of each coating for each type of flat wood paneling product (specified in 23.3.1 of this regulation) for each coating used each day in terms of ~~kg VOC/100 m^2 (lb VOC/1,000 ft^2)~~ lb VOC/gal of coating material applied (or kg VOC/L of coating material applied) and the ~~surface area~~ volume of each coating (in terms of gal or L) coated each day of each type of flat wood paneling product.

23.7.2.3 Reporting. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], the owner or operator of a flat wood paneling coating line referenced in 23.7.2 of this regulation shall notify the Department in either of the following instances:

23.7.2.3.1 Any record showing use of any noncomplying coatings shall be reported by sending a copy of such record to the Department within 45 calendar days following that use. This reporting requirement is in addition to any other exceedance reporting mandated by the State of Delaware.

23.7.2.3.2 At least 30 calendar days before changing the method of compliance from the use of complying coatings to control devices, the owner or operator shall comply with all requirements of 23.7.3.1 of this regulation, as well as 7 **DE Admin. Code** 1102. Upon changing the method of compliance from the use of complying coatings to control devices, the owner or operator shall comply with all requirements of the section applicable to the coating line referenced in 23.7.3 of this regulation.

23.7.3 Requirements for coating sources using control devices. Any owner or operator of a flat wood paneling coating line subject to 23.0 of this regulation and complying with 23.3 of this regulation by the use of control devices shall comply with the following:

23.7.3.1 Testing of control equipment. By ~~November 15, 1993~~ Within six months after [insert the effective date of this revision of 23.0], or upon startup of a new coating line, or upon changing the method of compliance for an existing coating line from the use of complying coatings to control devices, the owner or operator of the subject coating line shall perform a compliance test. Testing shall be performed within 90 days of startup, and pursuant to the procedures in **Appendix A**, **Appendix B** and **Appendix D** of this regulation and 23.6 of this regulation. The owner or operator of the subject coating line shall submit to the Department the results of all tests and calculations necessary to demonstrate that the subject coating line is or will be in compliance with the applicable section of this regulation on and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], or on and after the initial startup date.

23.7.3.2 Recordkeeping. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], or on and after the initial startup date, the owner or operator of a coating line referenced in 23.7.3 of this regulation shall collect and record all of the following information each day for each coating line and maintain the information at the facility for a period of five years:

23.7.3.2.1 The name and identification number of each coating used on each coating line, as applied, used to coat each type of flat wood paneling product.

23.7.3.2.2 ~~The mass of VOC per area of coated finished product~~ The VOC content of each coating for each type of flat wood paneling product (specified in 23.3.1 of this regulation) in terms of ~~kg VOC/100 m^2 (lb VOC/1,000 ft^2)~~ lb VOC/gal of coating material applied (or kg VOC/L of coating material applied), and the ~~surface area~~ volume of each coating (in terms of gal or L) coated each day of each type of flat wood paneling product.

23.7.3.2.3 The maximum VOC content of the coatings, as applied, used each day ~~(mass of VOC per area of coated finished product in terms of kg VOC/100 m^2 [lb VOC/1,000 ft^2])~~ (in terms of lb VOC/gal of coating material applied [or kg VOC/L of coating material applied].

23.7.3.2.4 The required overall emission reduction efficiency for each day for each coating line as determined in 23.6.2 of this regulation.

23.7.3.2.5 The actual overall emission reduction efficiency achieved for each day for each coating line as determined in 3.0 of **Appendix D** of this regulation.

23.7.3.2.6 Control device monitoring data.

23.7.3.2.7 A log of operating time for the capture system, control device, monitoring equipment, and the associated coating line.

23.7.3.2.8 A maintenance log for the capture system, control device, and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages.

23.7.3.2.9 For thermal incinerators, all 3-hour periods of operation in which the average combustion temperature was more than 28°C (50°F) below the average combustion temperature during the most recent performance test that demonstrated that the facility was in compliance. The combustion chamber set-point shall be no less than that during the most recent performance test that demonstrated that the facility was in compliance.

23.7.3.2.10 For catalytic incinerators, all three-hour periods of operation in which the average temperature of the process vent stream immediately before the catalyst bed is more than 28°C (50°F) below the average temperature of the process vent stream immediately before the catalyst bed during the most recent performance test that demonstrated that the facility was in compliance. The set-point for the process vent stream immediately before the catalyst bed shall be no less than that during the most recent performance test that demonstrated that the facility was in compliance.

23.7.3.2.11 For carbon adsorbers, all three-hour periods of operation during which either the average VOC concentration or the reading of organics in the exhaust gases is more than 20% greater than the average exhaust gas concentration or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the facility was in compliance.

23.7.3.3 Reporting. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 23.0], the owner or operator of a subject coating line referenced in 23.7.3 of this regulation shall notify the Department in the following instances:

23.7.3.3.1 Any record showing noncompliance with the applicable requirements for control devices shall be reported by sending a copy of the record to the Department within 45 calendar days following the occurrence. This requirement is in addition to any other exceedance reporting mandated by the State of Delaware.

23.7.3.3.2 At least 30 calendar days before changing the method of compliance from control devices to the use of complying coatings, the owner or operator shall comply with all requirements of 23.7.2.1 of this regulation, and 7 **DE Admin. Code** 1102. Upon changing the method of compliance from control devices to the use of complying coatings, the owner or operator shall comply with all requirements of the Section applicable to the coating line referenced in 23.7.2 of this regulation.

(Break in Continuity of Sections)

37.0 Graphic Arts Systems

~~11/29/1994~~ xx/xx/2010

37.1 Applicability

37.1.1 The provisions of 37.0 of this regulation apply to any packaging rotogravure, publication rotogravure, or flexographic printing press at any facility whose maximum theoretical emissions of volatile organic compounds (VOCs) (including solvents used to clean each of these printing presses) without control devices from all printing presses are greater than or equal to 7.7 tons per year~~.~~ on and after [insert effective date of this regulation], and

37.1.2 Transition period for existing permitted sources. Every owner or operator of press that is subject to 37.5.1.2.2 of this regulation and that is covered by a permit issued pursuant to 7 **DE Admin. Code** 1102 or 1130 containing all applicable conditions of 37.0 of this regulation, as that regulation existed on November 29, 1994, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011, every such owner or operator of any flexible package printing facility shall comply with the provisions of 37.0 of this regulation.

37.1.2~~3~~ An owner or operator of a facility whose emissions are below the applicability threshold<u>s</u> in 37.1.1 <u>and 37.5.1.2.2</u> of this regulation shall comply with the certification, recordkeeping, and reporting requirements of 37.7.1 of this regulation.

37.1.3~~4~~ Any facility that becomes or is currently subject to the provisions of 37.0 of this regulation by exceeding the applicability threshold<u>s</u> in 37.1.1 <u>and 37.5.1.2.2</u> of this regulation will remain subject to these provisions even if its emissions later fall below the applicability threshold<u>s</u>.

37.1.4~~5~~ Any facility that is currently subject to a state or federal rule promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and will remain subject to these provisions, even if its throughput or emissions have fallen or later fall below the applicability threshold.

37.2 Definitions. As used in 37.0 of this regulation, all terms not defined herein shall have the meaning given them in the November 15, 1990 Clean Air Act Amendments, or in 2.0 of this regulation.

"**<u>Add-on air pollution control device (APCD)</u>**" <u>means an emission control device or system that is originally separated from an emission source but can be later added or installed to the emission source to reduce emission from the source.</u>

"**<u>Flexible packaging</u>**" <u>means any package or part of a package the shape of which can be readily changed. Flexible packaging includes, but is not limited to, bags, pouches, liners, and wraps utilizing paper, plastic, film, aluminum foil, metalized or coated paper or film, or any combination of these materials.</u>

"**<u>Flexible packaging printing</u>**" <u>means printing, coating and laminating activities being performed on or in-line with a flexible packaging printing press.</u>

"**Flexographic printing press**" means a printing press that uses a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.

"**Packaging rotogravure printing press**" means a rotogravure printing press used to print on paper, paper board, metal foil, plastic film, and other substrates that are, in subsequent operations, formed into packaging products and labels, and other nonpublication products.

"**Press-Ready Ink**" means ink, as applied to a substrate, after all solvents and diluents have been added.

"**Printing press**" means equipment used to apply words, pictures, or graphic designs to either a continuous substrate or a sheet. A continuous substrate consists of paper, plastic, or other material that is unwound from a roll, passed through coating or ink applicators and any associated drying areas. The press includes all coating and ink applicators and drying areas between unwind and rewind of the continuous substrate. A sheet consists of paper, plastic, or other material that is carried through the process on a moving belt. The press includes all coating and ink applicators and drying operations between the time that the sheet is put on the moving belt until it is taken off.

"**Publication rotogravure printing press**" means a rotogravure printing press on which the following paper products are printed:

1. Catalogues, including mail order and premium.
2. Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes.
3. Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; points-of-purchase, and other printed display material.
4. Magazines, books.
5. Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars magazine inserts, and shopping news.
6. Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and Sections.
7. Periodicals.
8. Telephone and other directories, including business reference services.

"**Roll printing**" means the application of words, designs, and pictures to a substrate, usually by means of a series of rolls each with only partial coverage.

"**Rotogravure printing press**" means any printing press designed to print on a substrate using a gravure cylinder.

37.3 Standards

37.3.1 No owner or operator of a packaging rotogravure or flexographic printing press subject to 37.0 of this regulation shall apply any coating or ink unless the VOC content is equal to or less than one of the following:

37.3.1.1 40% VOC by volume of the coating or ink, excluding water and exempt compounds, as applied.

37.3.1.2 25% VOC by volume of the volatile content in the coating or ink, as applied.

37.3.1.3 0.5 kilogram (kg) VOC per kg (0.5 pound [lb] VOC per lb) coating solids, as applied.

37.3.2 No owner or operator of a publication rotogravure printing press subject to 37.0 of this regulation shall apply any coating or ink unless the VOC content is equal to or less than one of the following:

37.3.2.1 40% VOC by volume of the coating or ink, excluding water and exempt compounds, as applied.

37.3.2.2 25% VOC by volume of the volatile content in the coating or ink, as applied.

37.3.3 As an alternative to compliance with the limits in 37.3.1 or 37.3.2 of this regulation, an owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing press may comply with the requirements of of this regulation by meeting the requirements of 37.4 or 37.5 of this regulation.

37.4 Daily-weighted average limitations

37.4.1 No owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing press shall apply, during any day, coatings or inks on the subject printing press unless the daily-weighted average, by volume, VOC content of all coatings and inks, as applied, each day on the subject printing press is equal to or less than the limitation specified in either 37.3.1.1 or 37.3.2.1 (as determined by 37.4.4); 37.3.1.2 or 37.3.2.2 (as determined by 37.4.5); or, in the case of packaging rotogravure or flexographic printing, 37.3.1.3 (as determined by 37.4.6) of this regulation.

37.4.2 An owner or operator may comply with the daily-weighted average limitation by grouping coatings or inks used on a printing press into two categories that meet the conditions in 37.4.2.1 and 37.4.2.2 of this regulation. Any use of averaging between the two categories of coating or inks used on a packaging rotogravure press or on a flexographic press requires compliance with the emission standard in 37.3.1.3 of this regulation, as determined by the equation in 37.4.6 of this regulation.

37.4.2.1 The daily-weighted average VOC content for the first category shall comply with 37.3.1.1 or 37.3.2.1 of this regulation, as determined by applying the equation in 37.4.4 of this regulation to the coatings or inks in this first category.

37.4.2.2 The daily weighted-average VOC content for the second category shall comply with 37.3.1.2 or 37.3.2.2 of this regulation, as determined by applying the equation in 37.4.5 of this regulation to the coatings or inks in this second category.

37.4.3 Compliance with 37.0 of this regulation shall be demonstrated through the applicable coating or ink analysis test methods and procedures specified in **Appendix B** of this regulation and the recordkeeping and reporting requirements specified in 37.7.3 of this regulation.

37.4.4 The following equation shall be used to determine if the weighted average VOC content of all coatings and inks, as applied, each day on the subject printing press exceeds the limitation specified in 37.3.1.1 or 37.3.2.1 of this regulation:

$$VOC_{(i)(A)} = \frac{\sum_{i=1}^{n} L_i V_{VOCi}}{\sum_{i=1}^{n} L_i (V_{si} + V_{VOCi})} \times 100$$

(37-1)

where:

$VOC_{(i)(A)}$ = The weighted average VOC content in units of percent VOC by volume of all coatings and inks (excluding water and exempt compounds) used each day.

i = Subscript denoting a specific coating or ink, as applied.

n = The number of different coatings or inks, as applied, each day on a printing press.

L_i = The liquid volume of each coating or ink, as applied, used that day in units of liters (L) (gallons [gal]).

V_{si} = The volume fraction of solids in each coating or ink, as applied.

V_{VOCi} = The volume fraction of VOC in each coating or ink, as applied.

37.4.5 The following equation shall be used to determine if the weighted average VOC content of all coatings and inks, as applied, each day on the subject printing press exceeds the limitation specified in 37.3.1.2 or 37.3.2.2 of this regulation:

$$VOC_{(i)(B)} = \frac{\sum_{i=1}^{n} L_i V_{VOCi}}{\sum_{i=1}^{n} L_i (V_{VCi})} \times 100$$

(37-2)

where:

$VOC_{(i)(B)}$ = The weighted average VOC content in units of percent VOC by volume of the volatile content of all coatings and inks used each day.

i = Subscript denoting a specific coating or ink, as applied.

n = The number of different coatings or inks, as applied, each day on each printing press.

L_i = The liquid volume of each coating or ink, as applied, in units of L (gal).

V_{VOCi} = The volume fraction of VOC in each coating or ink, as applied.

V_{VCi} = The volume fraction of volatile matter in each coating or ink, as applied.

37.4.6 The following equation shall be used to determine if the weighted average VOC content of all coatings and inks, as applied, each day on the subject printing press exceeds the limitation specified in 37.3.1.3 of this regulation:

$$VOC_{(i)(C)} = \frac{\sum_{i=1}^{n} L_i D_i W_{VOCi}}{\sum_{i=1}^{n} L_i D_i W_{si}}$$

(37-3)

where:

$VOC_{(i)(C)}$ = The weighted average VOC content in units of mass of VOC per mass of coating solids.

i = Subscript denoting a specific coating or ink, as applied.

n = The number of different coatings or inks, as applied, each day on a printing press.

L_i = The liquid volume of each coating or ink, as applied, used on the day in units of L (gal).

D_i = The density of each, as applied, in units of mass of coating or ink per unit volume of coating or ink.

W_{VOCi} = The weight fraction of VOC in each coating or ink, as applied.

W_{si} = The weight fraction of solids in each coating or ink, as applied.

37.5 Control devices

37.5.1 No owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing press equipped with a control system shall operate the printing press unless the owner or operator meets one of the requirements under 37.5.1.1 and 37.5.1.2 of this regulation.

37.5.1.1 Control device efficiency

37.5.1.1.1 A carbon adsorption control device is used that reduces the VOC emissions delivered from the capture system to the control device by at least 90% by weight.

37.5.1.1.2 An incineration control device is used to reduce VOC emissions delivered from the capture system to the control device by at least 90%, by weight.

37.5.1.1.3 Any other VOC emission control device is used to reduce the VOC emissions delivered from the capture system to the control device by at least 90%.

37.5.1.2 Overall control efficiency. The printing press is equipped with a capture system and control device that provides ~~an overall emission reduction efficiency of at least~~:

37.5.1.2.1 For any press not subject to 37.5.1.2.2 of this regulation, an overall emission reduction efficiency of at least:

37.5.1.2.1.1 75% for a publication rotogravure printing press.

37.5.1.2.1.2 65% for a packaging rotogravure printing press.

37.5.1.2.1.3 60% for a flexographic printing press.

37.5.1.2.2 For any individual flexible packing printing press with the potential-to-emit before controls greater than 25 tons of VOC per year, an overall emission reduction efficiency specified in 37.5.1.2.1, or specified in 37.5.1.2.2.1 through 37.5.1.2.2.4 below, whichever is higher:

37.5.1.2.2.1 80% for any press that was first installed on or after March 14, 1995 and that is controlled by an APCD whose first installation date was on or after (insert the effective date of this revision).

37.5.1.2.2.2 75% for any press that was first installed on or after March 14, 1995 and that is controlled by an APCD whose first installation date was prior to (insert the effective date of this revision).

37.5.1.2.2.3 70% for any press that was first installed prior to March 14, 1995 and that is controlled by an APCD whose first installation date was on or after (insert the effective date of this revision).

37.5.1.2.2.4 65% for any press that was first installed prior to March 14, 1995 and that is controlled by an APCD whose first installation date was prior to (insert the effective date of this revision).

37.5.2 An owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing press equipped with a control system shall ensure that:

37.5.2.1 A capture system and control device are operated at all times that the printing press is in operation, and the owner or operator demonstrates compliance with 37.0 of this regulation

through the applicable coating analysis and capture system and control device efficiency test methods specified in **Appendix B**, **Appendix D** and **Appendix E** of this regulation and in accordance with the capture efficiency test methods in **Appendix D** of this regulation.

37.5.2.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

37.6 Test methods. The VOC content of each coating and ink and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in **Appendix A** through **Appendix D** of this regulation to establish the records required under 37.7 of this regulation.

37.7 Recordkeeping and reporting

37.7.1 Requirements for exempt sources. ~~By November 15, 1993~~ Within six months after [insert the effective date of this revision of 37.0], any owner or operator of a printing press that is exempt from the requirements of 37.0 of this regulation because of the criteria in 37.1 of this regulation shall comply with the following:

37.7.1.1 Initial certification. The owner or operator shall certify to the Department that the facility is exempt under the provisions of 37.1 of this regulation. Such certification shall include:

37.7.1.1.1 The name and location of the facility.

37.7.1.1.2 The address and telephone number of the person responsible for the facility.

37.7.1.1.3 A declaration that the facility is exempt from 37.0 of this regulation because of the criteria in 37.1 of this regulation.

37.7.1.1.4 Calculations demonstrating that total potential emissions of VOC from all flexographic and rotogravure printing presses at the facility are and will be less than 7.7 tons per year of press-ready ink, before the application of capture systems and control devices. Total potential emissions of VOC for a flexographic or rotogravure printing facility is the sum of potential emissions of VOC from each flexographic and rotogravure printing press at the facility. The following equation shall be used to calculate total potential emissions of VOC per calendar year before the application of capture systems and control devices for each flexographic and rotogravure printing press at the facility:

$$E_P = A \times B$$

(37-4)

where:

E_P = Total potential emissions of VOC from one flexographic or rotogravure printing press in units of kilograms per year (kg/yr) (pounds per year [lb/yr]).

A = Weight of VOC per volume of solids of the coating or ink with the highest VOC content, as applied, each year on the printing press in units of kilograms VOC per liter (kg VOC/L) (pounds of VOC per gallon [lb VOC/gal]) of coating or ink solids.

B = Total volume of solids for all coatings and inks that can potentially be applied each year on the printing press in units of liters per year (L/yr) (gallons per year [gal/yr]). The instrument or method by which the owner or operator accurately measured or calculated the volume of coating and ink solids applied and the amount that can potentially be applied each year on the printing press shall be described in the certification to the Department.

37.7.1.2 Recordkeeping. The owner or operator shall collect and record all of the following information each year for each printing press and maintain the information at the facility for a period of five years:

37.7.1.2.1 The name and identification number of each coating and ink, as applied, each year on each printing press.

37.7.1.2.2 The weight of VOC per volume of coating solids and the volume of solids of each coating and ink, as applied, each year on each printing press.

37.7.1.2.3 The total potential emissions as calculated in 37.7.1.1.4 of this regulation using VOC content for that year.

37.7.1.3 Reporting. Any record showing that total potential emissions of VOC from all printing presses exceed 7.7 tons per year of press-ready ink in any calendar year before the application of capture systems and control devices shall be reported by sending a copy of such record to the Department within 45 calendar days after the exceedance occurs. This requirement is in addition to any other State of Delaware exceedance reporting requirements.

37.7.2 Requirements for sources using complying coatings or inks. Any owner or operator of a printing press subject to 37.0 of this regulation and complying by means of use of complying coatings or inks, shall comply with the following:

37.7.2.1 Initial certification. ~~By November 15, 1993~~ Within six months after [insert the effective date of this revision of 37.0], or upon initial startup of a new printing press, or upon changing the method of compliance for an existing subject printing press from daily-weighted averaging or control devices to use of complying coatings or inks, the owner or operator of a subject printing press shall certify to the Department that the printing press will be in compliance with 37.3.1 or 37.3.2 of this regulation on and after ~~November 15, 1993~~ [insert the effective date of this revision of 37.0], or on and after the initial startup date. Such certification shall include:

37.7.2.1.1 The name and location of the facility.

37.7.2.1.2 The address and telephone number of the person responsible for the facility.

37.7.2.1.3 Identification of subject sources.

37.7.2.1.4 The name and identification number of each coating and ink, as applied.

37.7.2.1.5 The VOC content of all coatings and inks, as applied.

37.7.2.2 Recordkeeping. ~~By November 15, 1993~~ On and after [insert the effective date of this revision of 37.0], or on and after the initial startup date, the owner or operator of a printing press subject to the limitations of 37.0 of this regulation and complying by means of 37.3.1.1 or 37.3.2.1 of this regulation shall collect and record all of the following information each day for each printing press and maintain the information at the facility for a period of five years:

37.7.2.2.1 The name and identification number of each coating and ink, as applied.

37.7.2.2.2 The VOC content of each coating and ink, as applied, expressed in units necessary to determine compliance.

37.7.2.3 Reporting.

37.7.2.3.1 Any record showing an exceedance of the VOC contents of 37.3.1 or 37.3.2 of this regulation shall be reported by the owner or operator of the subject printing press to the Department within 45 calendar days following the exceedance, in addition to complying with any other applicable reporting requirements.

37.7.2.3.2 At least 30 calendar days before changing the method of compliance with 37.0 of this regulation from the use of complying coatings to daily-weighted averaging or control devices, the owner or operator shall comply with all requirements of 37.7.3.1 or 37.7.4.1 of this regulation, respectively, as well as the requirements of 7 **DE Admin. Code** 1102. Upon changing the method of compliance with 37.0 of this regulation from the use of complying coatings to daily-weighted averaging or control devices, the

owner or operator shall comply with all requirements of 37.7.3 or 37.7.4 of this regulation, respectively.

37.7.3 Requirements for sources using daily-weighted averaging. Any owner or operator of a printing press subject to the limitations of 37.0 of this regulation and complying by means of daily-weighted averaging shall comply with the following:

37.7.3.1 Initial certification. ~~By November 15, 1993~~ Within six months after [insert the effective date of this revision of 37.0], or upon initial startup of a new printing press, or upon changing the method of compliance for an existing subject press from use of complying coating or control devices to daily-weighted averaging, the owner or operator of the subject printing press shall certify to the Department that the printing press will be in compliance with 37.4 of this regulation on and after ~~November 15, 1993~~ [insert the effective date of this revision of 37.0], or on and after the initial startup date. Such certification shall include:

37.7.3.1.1 The name and location of the facility.

37.7.3.1.2 The address and telephone number of the person responsible for the facility.

37.7.3.1.3 The name and identification of each printing press that will comply by means of 37.4 of this regulation.

37.7.3.1.5 The name and identification number of each coating and ink available for use on each printing press.

37.7.3.1.6 The VOC content of each coating and ink, as applied, each day on each printing press, expressed in units necessary to determine compliance.

37.7.3.1.7 The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating and ink, as applied, each day on each printing press.

37.7.3.1.8 The method by which the owner or operator will create and maintain records each day as required in 37.7.3.2 of this regulation.

37.7.3.1.9 An example of the format in which the records required in 37.7.3.2 of this regulation will be kept.

37.7.3.2 Recordkeeping. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 37.0], or on and after the initial startup date, the owner or operator of a printing press subject to the limitations of 37.0 of this regulation and complying by means of daily-weighted averaging shall collect and record all of the following information each day for each printing press and maintain the information at the facility for a period of five years:

37.7.3.2.1 The name and identification number of each coating and ink, as applied, on each printing press.

37.7.3.2.2 The VOC content and the volume of each coating and ink, as applied, each day on each printing press, expressed in units necessary to determine compliance.

37.7.3.2.3 The daily-weighted average VOC content of all coatings and inks, as applied, on each printing press.

37.7.3.3 Reporting. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 37.0], the owner or operator of a subject printing press shall notify the Department in the following instances:

37.7.3.3.1 Any record showing noncompliance with 37.4 of this regulation shall be reported by sending a copy of such record to the Department within 45 calendar days following the occurrence. This requirement is in addition to any other State of Delaware exceedance reporting requirements.

37.7.3.3.2 At least 30 calendar days before changing the method of compliance with 37.0 of this regulation from daily-weighted averaging to use of complying coatings or control devices, the owner or operator shall comply with all requirements of of this regulation, respectively, as well as 7 **DE Admin. Code** 1102. Upon changing the method of compliance with 37.0 of this regulation from daily-weighted averaging to use of

complying coatings or control devices, the owner or operator shall comply with all requirements of 37.7.2 or 37.7.4 of this regulation, respectively.

37.7.4 Requirements for sources using control devices. Any owner or operator of a printing press subject to 37.0 of this regulation and complying by means of control devices shall comply with 4.5 of this regulation and the following:

37.7.4.1 Initial certification. ~~By November 15, 1993~~ Within six months after [insert the effective date of this revision of 37.0], or upon initial startup of a new printing press, or upon changing the method of compliance for an existing printing press from use of complying coatings or daily-weighted averaging to control devices, the owner or operator of the subject printing press shall perform all tests and submit to the Department the results of all tests and calculations necessary to demonstrate that the subject printing press will be in compliance with 37.5 of this regulation, on and after ~~November 15, 1993~~ [insert the effective date of this revision of 37.0], or on and after the initial startup date.

37.7.4.2 Recordkeeping. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 37.0], or on and after the initial startup date, the owner or operator of a printing press subject to the limitations of 37.0 of this regulation and complying by means of control devices shall collect and record all of the following information each day for each printing press and maintain the information at the facility for a period of five years:

37.7.4.2.1 Control device monitoring data.

37.7.4.2.2 A log of operating time for the capture system, control device, monitoring equipment and the associated printing press.

37.7.4.2.3 A maintenance log for the capture system, control device, and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages.

37.7.4.3 Reporting. On and after ~~November 15, 1993~~ [insert the effective date of this revision of 37.0], the owner or operator of a subject printing press shall notify the Department in the following instances:

37.7.4.3.1 Any record showing non-compliance with 37.5 of this regulation shall be reported by sending a copy of such record to the Department within 45 calendar days following the occurrence. This requirement is in addition to any other State of Delaware exceedance reporting requirements.

37.7.4.3.2 At least 30 calendar days before changing the method of compliance with 37.0 of this regulation from control devices to use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of 37.7.2.1 or 37.7.3.1 of this regulation, respectively, as well as 7 **DE Admin. Code** 1102. Upon changing the method of compliance with 37.0 of this regulation from control devices to use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of 37.7.2 or 37.7.3 of this regulation, respectively.

(Break in Continuity of Sections)

45.0 Industrial Cleaning Solvents.

~~11/29/1994~~ mm/dd/2010

45.1 Applicability.

45.1.1 The provisions of 45.0 of this regulation apply to all sources that use organic solvents for the purpose of cleaning. The provisions of 45.3, 45.4, and 45.5 of this regulation do not apply to the following sources:

45.1.1.1 Any source that is covered under 33.0, Solvent Metal Cleaning, of this regulation.

45.1.1.2 Any non-manufacturing area cleaning operation.

45.1.1.3 Any non-routine maintenance of manufacturing facilities and equipment.

45.1.1.4 Any source that ~~uses~~ emits less than 4,540 kilograms (five tons) of ~~cleaning solvent~~ volatile organic compounds per year from all cleaning activities at the facility.

45.1.2 Any facility that becomes or is currently subject to the provisions of 45.0 of this regulation by exceeding the applicability threshold in 45.1.1.4 of this regulation shall remain subject to these provisions even if its emissions later fall below the applicability threshold.

45.1.3 Any facility that is currently subject to a state or federal rule promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and shall remain subject to these provisions, even if its throughput or emissions later fall below the applicability threshold.

45.1.4 Existing sources shall comply with this regulation upon promulgation. New, reconstructed, or modified sources shall comply with the requirements of this regulation beginning fifteen months after startup and shall follow the time schedule for the solvent usage study, screening tests, and trial evaluations as specified in 45.0 of this regulation.

45.2 Definitions. As used in 45.0 of this regulation, all terms not defined herein shall have the meaning given them in the November 15, 1990 Clean Air Act Amendments (CAAA), or in 2.0 this regulation.

"**Cleaning activity**" means the physical removal of foreign material from substrate that is being cleaned.

"**Cleaning of external surface**" means the act of applying a solvent to an external surface for cleaning. The cleaning activities may include, but are not limited to, wiping and spraying. Unit operation systems in this category include, but are not limited to, floor cleaning, equipment cleaning, large manufactured component cleaning, small manufactured component cleaning, and spray-booth cleaning.

"Cleaning of internal surface" means the act of applying a solvent to an interior surface for cleaning. The cleaning activities may include, but are not limited to, flushing, purging, and spraying. Unit operation systems in this category include, but are not limited to, line cleaning, tank cleaning, spray-gun cleaning, and spray-booth cleaning.

"**Dipping**" means immersing an item in a container of solvent to remove contaminants or residue.

"**Equipment, facility, and procedural change**" means the use of alternative cleaning techniques and procedures, such as the use of high-pressure water equipment to reduce solvent stripping, floor scrubbers, removable or replaceable equipment covers, improved containment of volatile organic compounds (VOCs) from materials in storage/transfer/use, improved reclaim/reuse/recycle procedures, etc.

"**Flushing**" means pumping a solvent from a reservoir through a pipe or hose or through equipment (e.g., pipes, hoses, tanks) to remove contaminants or residue.

"**Material change**" means the use of caustic cleaners, cleaners with a low VOC content or low vapor pressure, peelable-type equipment/structure coatings, etc.

"**Non-manufacturing area cleaning**" means the cleaning of cafeterias, laboratories, pilot facilities, restrooms, office buildings, etc.

"**Parts cleaning**" means the spraying or wiping of solvent on a part or the dipping of a part in solvent for cleaning. Unit operation systems in this category include, but are not limited to, small manufactured component cleaning, tool cleaning, and maintenance equipment cleaning.

"**Purging**" means the cleaning of the interior of a spray gun and other attached equipment (e.g., hoses, paint cups) cleaned simultaneously with the spray gun.

"**Spraying**" means the application of a cleaning solvent to a surface through a nozzle.

"**Unit operation system (UOS)**" means the ensemble of equipment around which a material balance is performed. A UOS includes all possible points/sources that could result in losses to the atmosphere as a result of its being cleaned, including losses during dispensing of solvent, losses from residual solvent on or in cleaning tools (such as rags), losses from solvent storage, etc. An item of equipment used for cleaning parts by definition is a unit operation; therefore, carry-out losses during removal of cleaned parts shall be considered in a material balance. A UOS may include more than one cleaning activity that, by itself, could be classified as a UOS.

45.3 Standards.

45.3.1 Solvent Usage Study. An owner or operator of a source that uses organic solvents for the purpose of cleaning shall conduct a Solvent Usage Study in accordance with the following procedures:

45.3.1.1 Each type of cleaning operation involving the use of an organic solvent shall be categorized as one or more of the following operations:

45.3.1.1.1 Cleaning of internal surfaces.

45.3.1.1.2 Cleaning of external surfaces.

45.3.1.1.3 Parts cleaning.

45.3.1.2 Each type of cleaning operation involving the use of an organic solvent shall be defined as a UOS that has a theoretical system boundary such that all solvent inputs, outputs, and evaporative losses may be calculated using a simple mass balance equation. The owner or operator shall submit the following information for each UOS as part of the Solvent Usage Study:

45.3.1.2.1 Engineering drawings or sketches of all UOSs. The drawings or sketches shall indicate a system boundary, solvent input or inputs, solvent output or outputs, and solvent evaporative loss points.

45.3.1.2.2 One mass balance equation, or equivalent, per UOS. Each equation shall have variables sufficient for calculating total VOC emissions from the UOS.

45.3.1.2.3 A quantification of total VOC emissions from each UOS.

45.3.1.2.4 Any relevant assumptions or approximations made in defining each UOS.

45.3.1.3 The Solvent Usage Study shall be completed and submitted to the Department within three months of the promulgation of 45.0 of this regulation.

45.3.2 Screening Tests. An owner or operator of a source that uses organic solvents for the purpose of cleaning shall conduct Screening Tests to evaluate the performance of alternative (aqueous or lower VOC) cleaning solutions in accordance with the following procedures:

45.3.2.1 Screening Tests shall evaluate alternative cleaning solutions as possible substitutes for the current solvents used in the three cleaning operations, or UOSs, identified as the largest sources (or the number identified, if less than three) of uncontrolled VOC emissions by the Solvent Usage Study described in 45.3.1 of this regulation.

45.3.2.2 Screening Tests shall be performed using one, or a combination of, the test methods presented in 45.4 of this regulation. A Screening Test Plan shall be submitted to the Department for review within six months of the promulgation of 45.0 of this regulation. The Department will accept, modify, or reject the Screening Test Plan within 90 days of receiving the plan. The Department may refuse to accept any testing for which it has not had an opportunity to review the test protocol or to observe the test.

45.3.2.3 Once an owner or operator has a Screening Test Plan that has been accepted by the Department, Screening Tests shall be conducted. The results of such Screening Tests shall be submitted to the Department for review within twelve months of the promulgation of 45.0 of this regulation. The Department will accept or reject the Screening Tests results within 90 days of receiving the results. The Department may accept the results of tests conducted after January 1, 1990, but started prior to the adoption of 45.0 of this regulation, if review of the test methods and results show that a test protocol consistent with 45.4 of this regulation was used.

45.3.2.4 The Screening Tests results submitted to the Department shall include, at a minimum, the following information for each alternative cleaning solution examined:

45.3.2.4.1 The VOC content.

45.3.2.4.2 The results of the Screening Tests conducted using any of the methods presented in 45.4 of this regulation and accepted by the Department in an approved Screening Test Plan.

45.3.2.4.3 The results of any other relevant evaluations performed.

45.3.2.5 Identical or similar UOSs may be compared, for the purpose of screening tests and trial evaluations, by establishing with the Department such similarity and receiving Department

approval, and as such shall not require separate screening tests and trial evaluations. The Department may consider the similarity of UOSs that are maintained by the owner or operator in a comparable facility or simulated pilot operation in another state.

45.3.3 Trial Evaluations. An owner or operator of a source that uses organic solvents for the purpose of cleaning shall conduct Trial Evaluations for the alternative solvents which show the greatest degree of emission reductions, considering technical and economical feasibility, based on the Screening Tests results accepted by the Department. The Trial Evaluations shall be conducted in accordance with the following procedures:

45.3.3.1 Trial data shall compare cleaning solvent usage both before and during the Trial Evaluations.

45.3.3.2 Each test trial shall evaluate potential material and equipment, facility, and procedural changes for reducing VOC emissions from cleaning solvent usage.

45.3.3.3 Following the Trial Evaluations, an owner or operator of the source shall prepare a Summary Report on the results of the Trial Evaluations. The Summary Report shall include the following information:

45.3.3.3.1 A brief description of the steps taken under 45.3.1 through 45.3.3 of this regulation to identify cleaning solvent usage and to evaluate material and equipment, facility, and procedural changes to reduce VOC emissions.

45.3.3.3.2 The results of the Trial Evaluations. The Department may accept the results of any Trial Evaluations conducted after January 1, 1990, but started prior to the adoption to 45.0 of this regulation, if review of the test methods and results show that a test protocol consistent with 45.4 of this regulation was used.

45.3.3.3.3 A Cleaning Solvent Proposal for the adoption of those material and equipment, facility, and procedural changes demonstrated to be feasible and reasonable in reducing VOC emissions. The Summary Report shall include a proposed schedule for implementing the Cleaning Solvent Proposal as soon as practicable, but no later than November 1, 1996.

45.3.3.4 Trial Evaluations shall be completed, and the Summary Report and the Cleaning Solvent Proposal shall be submitted to the Department for review, within twenty months of the promulgation of 45.0 of this regulation, unless an owner or operator demonstrates to the Department that such timing is unreasonable.

45.3.3.5 Identical or similar UOSs may be compared, for the purpose of screening tests and trial evaluations, by establishing with the Department such similarity and receiving Department approval, and as such shall not require separate screening tests and trial evaluations. The Department may consider the similarity of UOSs that are maintained by the owner or operator in a comparable facility or simulated pilot operation in another state.

45.3.3.6 After receipt of the Summary Report and the Cleaning Solvent Proposal, the Department shall approve the report as soon as practicable, or shall notify the owner or operator of any concerns to be addressed.

45.3.3.7 After final Department approval of the Summary Report, the changes will be incorporated into the permit conditions. The owner or operator shall implement the Cleaning Solvent Proposal and the approved schedule. Implementation shall be completed no later than November 1, 1996, unless the owner or operator demonstrates to the Department that such timing is unreasonable.

45.3.3.8 An owner or operator may implement changes to its cleaning solvent proposal that have been approved and implemented under 45.3.3.6 and 45.3.3.7 of this regulation, if the change results in no increase in emissions. In such case, no notification to the Department shall be required. The change, however, shall still be subject to any preconstruction permitting and operating permit approvals that may apply.

45.4 Test Methods. Compliance with 45.3.2.4 of this regulation shall be achieved by applying any of the following test methods:

45.4.1 American Society for Testing and Materials (ASTM) Method D-4828 for determining the practical washability of organic coatings.

45.4.2 Method for determining the performance of alternative cleaning fluids found in **Appendix M** of this regulation.

45.4.3 Any site-specific evaluation test, accepted by the Department, that is designed to compare cleaning solvent usage through material or procedural changes to potentially reduce VOC emissions.

45.5 Recordkeeping. An owner or operator of a source that uses organic solvents for the purpose of cleaning shall maintain the following records in a readily accessible location for at least five years and shall make these records available to the Department upon verbal or written request:

45.5.1 Detailed records of organic solvent usage for each UOS incorporated in a permit in accordance with the requirements listed in 45.3 of this regulation.

45.5.2 Records of organic solvent usage and monthly VOC emission calculations for each UOS incorporated in a permit.

45.6 Reporting and Certification. An owner or operator of a source that uses organic solvents for the purpose of cleaning shall initially report to the Department the total quantity of solvent that it used for the calendar year prior to the promulgation date of 45.0 of this regulation. This initial report shall be submitted to the Department within three months of the promulgation of 45.0 of this regulation. Each year, the owner or operator shall submit subsequent reports to the Department by the promulgation date (month, day) of 45.0 of this regulation. The initial and subsequent reports shall include the following information:

45.6.1 The name and location of the facility.

45.6.2 The address and telephone number of the person responsible for the facility.

45.6.3 The tons of solvent used during the calendar year prior to the promulgation date of 45.0 of this regulation and a copy of the calculations that were performed to estimate the amounts.

45.6.4 A certification that the source is in compliance with 45.3, 45.4, and 45.5 of this regulation or that these paragraphs do not apply based on the exclusions of 45.1.1 of this regulation.

(Break in Continuity of Sections)

47.0 Offset Lithographic Printing and Letterpress Printing.

~~11/29/1994~~ xx/xx/2010

47.1 Applicability.

47.1.1 The provisions of 47.0 of this regulation apply to any offset lithographic or letterpress printing press ~~facility, including heatset web, non-heatset web (non-newspaper), non-heatset sheet-fed, and newspaper (non-heatset web) facilities~~. Except as provided in 47.1.2 of this regulation, every owner or operator of any offset lithographic or letterpress printing press shall comply with the provisions of 47.0 of this regulation on and after [insert effective date of the revised 47.0 of regulation].

47.1.2 Transition period for existing permitted sources. Every owner or operator of any offset lithographic printing press that is subject to a permit issued pursuant to 7 **DE Admin. Code** 1102 or 1130 containing all applicable conditions of 47.0 of this regulation, as that regulation existed on November 29, 1994, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011, every such owner or operator of any offset lithographic printing press shall comply with the provisions of 47.0 of this regulation.

47.1.~~2~~3 Except as specified in 47.6.1 of this regulation, ~~T~~the provisions of 47.0 of this regulation do not apply to any offset lithographic and letterpress printing ~~facility~~ press within a facility whose total actual volatile organic compound (VOC) emissions from all offset lithographic and letterpress printing operations (including emissions from cleaning solutions used on lithographic printing presses) are less than 6.8 kilograms (kg) (15 pounds [lb]) VOCs per day before ~~the~~ application of capture systems and control devices.

~~47.1.3 The provisions of 47.0 of this regulation do not apply to other types of printing operations, such as flexography, rotogravure, or letterpress.~~

~~47.1.4 Existing sources affected by 47.0 of this regulation shall comply with the provisions of 47.0 of this regulation as soon as practicable, but no later than April 1, 1996. New, modified, or reconstructed sources affected by 47.0 of this regulation shall comply with the provisions of 47.0 of this regulation upon startup.~~

47.1.~~5~~4 Any facility that becomes or is currently subject to the provisions of 47.0 of this regulation by exceeding the applicability threshold in 47.1.~~2~~3 of this regulation shall remain subject to ~~these provisions~~ 47.0 of this regulation even if its emissions later fall below the applicability threshold.

47.1.~~6~~5 Any facility that is currently subject to a state or federal rule promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and shall remain subject to these provisions, even if its throughput or emissions have fallen or later fall below the applicability threshold.

47.2 Definitions. As used in 47.0 of this regulation, all terms not defined herein shall have the meaning given them in the November 15, 1990 Clean Air Act Amendments (CAAA), or in 2.0 of this regulation.

"**Alcohol**" means a chemical compound consisting of the hydroxyl (OH) group attached to an alkyl radical and having the general formula $C_nH2_{n+1}OH$, such as ethanol, n-propanol, and iso-propanol.

"**Alcohol substitute**" means a non-alcohol additive that contains VOCs and is used in the fountain solution to reduce the surface tension of water or to prevent piling (ink build-up).

"**Batch**" means a supply of fountain solution that is prepared continuously or as a batch and that is used without alteration until completely used or removed from the printing process.

"**Cleaning solution**" means a liquid that is used to remove ink, including dried ink, and debris from the operating surfaces of the printing press and its parts.

~~"**Dampening system**" means equipment that is used to deliver the fountain solution to the lithographic plate.~~

"**Fountain solution**" means a mixture of water and non-volatile printing chemicals, and additives which reduce the surface tension of the water. The fountain solution wets the non-image areas so that the ink is maintained within the image areas.

"**Heatset**" means any operation in which heat is required to evaporate ink oil from the printing ink.

"**Letterpress printing**" means a printing process in which the image is raised relative to the non-image area and the paste ink is transferred to the substrate directly from the image surface.

"**Lithography**" or "**lithographic printing**" means a printing process in which the image and non-image areas are chemically differentiated; the image area is oil-receptive and the non-image area is water-receptive. This method differs from other printing methods, in which the image is a raised or recessed surface.

"**Non-heatset**" or "**coldset**" means any operation in which printing inks are set without the use of heat. For the purposes of 47.0 of this regulation, ultraviolet-cured and electron beam-cured inks are considered non-heatset operations.

"**Offset lithographic printing**" means a printing process ~~in which~~ that transfers the ink film is transferred from the lithographic plate to an intermediary surface (blanket), which, in turn, transfers the ink film to the substrate.

"**Press**" means a printing production assembly that is composed of one or many units to produce a printed sheet or web.

"**Sheet-fed**" means a printing operation in which individual sheets of substrate are fed to the press sequentially.

"**Total actual VOC emissions**" means the quantity of VOCs emitted from all lithographic ~~printing presses~~ and letterpress printing operations, including VOC emissions from cleaning materials and activities, during a particular time period.

"**Unit**" means the smallest complete printing component of a printing press.

"**Web**" means a continuous roll of paper used as the printing substrate.

47.3 Standards.

47.3.1 No owner or operator of a heatset offset lithographic printing press or a heatset letterpress printing press shall operate the printing press unless the owner or operator ~~installs a control device to~~ reduce~~s~~ VOC emissions from the press dryer exhaust vent by complying with 47.3.1.1, or 47.3.1.2, or 47.3.1.3 at all time the press operates:

47.3.1.1 At least 90% ~~(weight) of the uncontrolled total organics (minus methane and ethane), or maintains a maximum dryer exhaust outlet concentration of 20 parts per million by volume (ppmv) as methane (as C1), whichever is less stringent when the press is in operation~~ by weight, if the first installation date of the control device is prior to [insert the effective date of this regulation].

47.3.1.2 At least 95%, by weight, if the first installation date of the control device is on or after [insert the effective date of this regulation].

47.3.1.3 Maintaining a maximum press dryer exhaust outlet VOC concentration of 20 parts per million by volume (ppmv) as carbon (C1) on a dry basis,

47.3.2 No owner or operator of an offset lithographic printing press ~~that uses alcohol in the fountain solution~~ shall operate the printing press unless the owner or operator meets ~~one of~~ the requirements listed under 47.3.2..1, 47.3.2.2, or 47.3.2.3~~, and 47.3.2.4~~ of this regulation.

47.3.2.1 For any heatset web offset lithographic printing press~~es,~~:

47.3.2.1.1 When the fountain solution contains alcohol, the fountain solution on-press (as applied) VOC content shall be maintained ~~at 1.6% or less (by volume). Alternatively, a standard of 3% or less (by volume) alcohol may be used if the fountain solution containing alcohol is refrigerated to less than 15.6 degrees Celsius (°C) (60 degrees Fahrenheit [°F]).~~:

47.3.2.1.1.1 At 1.6% or less (by volume), or

47.3.2.1.1.2 At 3.0% or less (by volume) and the temperature of the fountain solution shall be maintained at or below 15.5 degrees Celsius (°C) (60 degrees Fahrenheit [°F]).

47.3.2.1.2 When the fountain solution contains no alcohol, the fountain solution on-press (as-applied) VOC content shall be maintained at 3.0% or less (by volume).

47.3.2.2 For any non-heatset web offset lithographic printing press~~es, the alcohol content in the fountain solution shall be eliminated. Alternatively, non-alcohol additives or alcohol substitutes may be used to accomplish the total elimination of alcohol use.~~:

47.3.2.2.1 There shall be no alcohol in the fountain solution, and

47.3.2.2.2 The fountain solution on-press (as-applied) VOC content shall be maintained at 3.0% or less (by volume).

47.3.2.3 For any sheet-fed offset lithographic printing press~~es~~, ~~the alcohol content in the fountain solution shall be maintained at 5% or less (by volume). Alternatively, a standard of 8.5% or less (by volume) alcohol may be used if the fountain solution is refrigerated to below 15.6°C (60°F)~~ the fountain solution on-press (as-applied) VOC content shall be maintained.

47.3.2.3.1 At 5.0% or less (by volume), or.

47.3.2.3.2 At 8.5% or less (by volume) and the temperature of the fountain solution shall be maintained at or is refrigerated to below 15.65°C (60°F).

~~47.3.2.4 Any type of offset lithographic printing press shall be considered in compliance with this regulation if the only VOCs in the fountain solution are in non-alcohol additives or alcohol substitutes, so that the concentration of VOCs in the fountain solution is 3.0% or less (by weight). (The fountain solution shall not contain any alcohol.)~~

47.3.3 No owner or operator of an offset lithographic printing press or a letterpress printing press shall operate the printing press unless the owner or operator reduces VOC emissions from cleaning solutions by meeting requirements in 47.3.3.1, or 47.3.3.2 and 47.3.3.3, of this regulation:

47.3.3.1 ~~u~~Using a cleaning solution with a 30% or less (as used) VOC content.

47.3.3.2 ~~Alternatively, the use~~ Using of cleaning solutions with a VOC composite partial vapor pressure less than 10 millimeters (mm) mercury (Hg) (0.4 inches [in] Hg) at 20°C (68°F) ~~may be used~~. The VOC composite partial vapor pressure is calculated as follows:

$$PP_C = \sum_{i=1}^{n} \frac{\frac{(W_i)(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

(47-1)

Where:

W_i = Weight of the ~~ith~~ i^{th} VOC compound, in grams (g);

W_w = Weight of water, in g;

W_e = Weight of exempt compound, in g;

MW_i = Molecular weight of the ~~ith~~ i^{th} VOC compound, in grams per gram-mole $\left(\frac{g}{g-mole}\right)$;

MW_w = Molecular weight of water, in $\left(\frac{g}{g-mole}\right)$;

MW_e = Molecular weight of exempt compound, in $\left(\frac{g}{g-mole}\right)$;

PP_C = VOC composite partial pressure at 20°C, in mmHg

VP_i = Vapor pressure of the ~~ith~~ i^{th} VOC compound at 20°C, in mmHg

47.3.3.3 Keeping all cleaning solutions and used shop towels or cloths in closed containers.

47.4 Control Devices. An owner or operator of an offset lithographic printing press or a letterpress printing press equipped with a control system shall ensure that:

47.4.1 The capture system and control device are operated at all times ~~that~~ when the printing press is in operation, and ~~the owner or operator demonstrates~~ compliance with 47.0 of this regulation is demonstrated through the applicable coating analysis and capture system and control device efficiency test methods specified in **Appendix B**, **Appendix D**, and **Appendix E** of of this regulation and in accordance with the capture efficiency test methods specified in **Appendix D** of this regulation.

47.4.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

47.5 Test Methods and Procedures.

47.5.1 The VOC content of each ink, the alcohol content of each fountain solution, and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in **Appendix A** through **Appendix D** of this regulation to establish the records required under 47.6 of this regulation.

47.5.2 To demonstrate compliance with the emission control requirements of 47.0 of this regulation, the ~~affected~~ facility affected by 47.0 of this regulation shall be run at maximum operating conditions and flow rates during any emission testing.

47.5.3 Emission tests for facilities using an add-on dryer exhaust control device shall include an initial test when the control device is installed and ~~operating~~ in operation that demonstrates compliance with ~~either the 90% (by weight) reduction or the 20 ppmv emission limit~~ 47.3.1 of this regulation.

47.5.4 To determine compliance with 47.3.2 of this regulation, the owner or operator of an offset lithographic printing facility shall perform the following procedures:

47.5.4.1 A sample shall be taken of the fountain solution (as used) from the fountain tray or reservoir that contains a fresh batch of fountain solution (after mixing), for each unit or centralized reservoir, to determine the alcohol content of the fountain solution in accordance with 47.3.2.1 through 47.3.2.~~3~~4 of this regulation, before the fountain solution is used.

47.5.4.2 A direct measurement of the alcohol content of the fountain solution sample or samples shall be performed in accordance with the method specified in **Appendix L** of this regulation.

47.5.4.3 Alternatively, a sample of the fountain solution (as used) may be taken from the fountain tray or reservoir of fountain solution during use and measured with a hydrometer or refractometer that has been standardized with tests performed in accordance with 47.5.4.1 and 47.5.4.2 of this regulation. The unit shall be considered in compliance with 47.3.2.1 through 47.3.2.~~3~~4 of this regulation if the refractometer or hydrometer measurement is less than or equal to the measurement obtained by the method specified in **Appendix L** of this regulation plus 10%.

47.5.4.4 The VOC content of a fountain solution containing alcohol substitutes or non-alcohol additives shall be established with proper recordkeeping and the manufacturer's laboratory analysis of the VOC content of the concentrated alcohol substitute and included in facility records. Records shall include the amount of concentrated substitute added per quantity of fountain water; the date and time of preparation if the fountain solution is mixed as a batch; and the calculated VOC content of the final solution to fulfill the requirements listed in 47.3.2.4 of this regulation.

47.5.5 To determine compliance with 47.3.2.1 and 47.3.2.3 of this regulation, an owner or operator of an offset lithographic printing facility shall use a thermometer or other temperature detection device capable of reading to 0.28°C (0.5°F) accuracy to ensure that a refrigerated fountain solution containing alcohol is below 15.~~6~~5°C (60°F) at all times.

46.5.6 To determine compliance with 47.3.3 of this regulation, an owner or operator of an offset lithographic printing press or a letterpress printing press shall:

47.5.6.1 Take a sample of the cleaning solution (as used) to demonstrate compliance with the cleaning solution VOC content limitations listed in 47.3.3 of this regulation. If the cleaning solution is used as received from the supplier without dilution or alteration, the manufacturer's technical information may be used to demonstrate compliance.

47.5.6.2 Use the method specified in **Appendix L** of this regulation to determine the VOC content of the cleaning solution (as used). Alternatively, the VOC content and VOC partial pressure of the cleaning solution may be established using the manufacturer's technical data. If the cleaning solution is prepared through the dilution of concentrated materials, the blending ratio and VOC content of the concentrate may be used to determine the "as used" VOC content of the cleaning solution.

47.6 Recordkeeping and Reporting.

47.6.1 Requirements for Sources Below Threshold Emission Limit. Any owner or operator of any offset lithography printing ~~press~~ facility, any letterpress printing facility, or any facility with both offset lithographic and letterpress printing operations, that emits less than the threshold limit according to 47.1 of this regulation shall comply with the following requirements:

47.6.1.1 Initial Certification. Within six months after [insert the effective date of this revision of 47.0], or upon initial startup of a new printing press, ~~T~~the owner or operator shall certify to the Department that the facility emits less than the threshold limit according to 47.1 of this regulation. Such certification shall include the following information:

47.6.1.1.1 The name and location of the facility.

47.6.1.1.2 The address and telephone number of the person responsible for the facility.

47.6.1.1.3 A declaration that the facility is not subject to the requirements of 47.0 of this regulation because of the criteria listed in 47.1 of this regulation.

47.6.1.1.4 The calculations demonstrating that total actual VOC emissions from all offset lithographic and letterpress printing presses at the facility are and will be less than 6.8 kg (15 lb) per day before the application of capture systems and control devices.

47.6.1.1.5 A description of the instrument or method by which the owner or operator accurately measured or calculated the volume of ink applied and the amount that can potentially be applied each year on each printing press.

47.6.1.2 Recordkeeping. On and after [insert the effective date of this revision of 47.0], ~~T~~the owner or operator shall collect and record all of the following information each year for each offset lithographic printing press and each letterpress printing press and maintain the information at the facility for a period of five years:

47.6.1.2.1 The name and identification number of each ink, as applied, each year on each printing press.

47.6.1.2.2 The weight of VOC per volume of coating solids and the volume of solids of each ink, as applied, each year on each printing press.

47.6.1.2.3 The total actual VOC emissions as calculated in 47.6.1.1.4 of this regulation using the VOC content for that year.

47.6.1.3 Reporting. On and after [insert the effective date of this revision of 47.0], ~~Upon promulgation of 47.0 of this regulation,~~ any record showing that total actual emissions of VOCs from all offset lithographic printing presses and all letterpress printing presses exceed 15 lb (6.8 kg ~~(15 lb~~) per day before the application of capture systems and control devices shall be reported by sending a copy of the record to the Department within 45 calendar days after the exceedance occurs. This requirement is in addition to any other State of Delaware exceedance reporting requirements.

47.6.2 Requirements for Sources Above Threshold Emission Limit. Any owner or operator of any offset lithography printing ~~press~~ facility, or any letterpress printing facility, or any facility with both offset lithographic and letterpress printing operations, that emits greater than the threshold limit according to 47.1 of this regulation shall comply with the following requirements:

47.6.2.1 Initial Certification. Within six months after [insert the effective date of this revision of 47.0], or upon initial startup of a new printing press, ~~T~~the owner or operator shall certify to the Department that the facility emits greater than the threshold limit according to 47.1 of this regulation. Such certification shall include the following information:

47.6.2.1.1 The name and location of the facility.

47.6.2.1.2 The address and telephone number of the person responsible for the facility.

47.6.2.1.3 The calculations demonstrating that total actual VOC emissions from all ~~offset lithographic printing presses~~ aspects of printing operations at the facility are and shall be greater than 15 lb (6.8 kg ~~(15 lb~~) per day before the application of capture systems and control devices.

47.6.2.1.4 A description of the instrument or method by which the owner or operator accurately measured or calculated the volume of ink applied and the amount that can potentially be applied each year on each printing press.

47.6.2.2 Recordkeeping. On and after [insert the effective date of this revision of 47.0], ~~T~~the owner or operator shall collect and record all of the following information each year for each

offset lithographic printing press and each letterpress printing press and maintain the information at the facility for a period of five years:

47.6.2.2.1 The name and identification number of each ink, as applied, each year on each printing press.

47.6.2.2.2 The weight of VOCs per volume of coating solids and the volume of solids of each ink, as applied, each year on each printing press.

47.6.2.2.3 The total actual VOC emissions as calculated in ~~47.6.1.1.4~~ 47.6.2.1.3 of this regulation using the VOC content for that year.

47.6.3 Requirements for Sources Using an Add-On Dryer Exhaust Control Device.

47.6.3.1 Within six months after [insert the effective date of this revision of 47.0], or upon initial startup of a new printing press, ~~T~~the owner or operator of a heatset offset lithographic printing press, or a heatset letterpress printing press, shall install, calibrate, maintain, and operate a temperature monitoring device, according to the manufacturer's instructions, at the outlet of the control device. The monitoring temperature shall be set during the testing required to certify compliance with the requirements of 47.4 of this regulation. Monitoring shall be performed only when the unit is operational.

47.6.3.2 The temperature monitoring device shall be equipped with a continuous recorder and shall have an accuracy of 0.28°C (0.5°F).

47.6.3.3 The dryer pressure shall be maintained lower than the press room area pressure such that air flows into the dryer at all times when the press is operating. A 100% emissions capture efficiency for the dryer shall be demonstrated using an air flow direction measuring device.

47.6.4 Requirements for Monitoring Fountain Solution VOC Concentration. On and after [insert the effective date of this revision of 47.0], ~~T~~the alcohol concentration in the fountain solution shall be monitored to provide data that can be correlated to the amount of material used when the fountain solution complies with the limits listed in 47.3.2.1 through 47.3.2.4 of this regulation. One of the following methods shall be used to frequently measure the concentration of alcohol in the fountain solution:

47.6.4.1 The owner or operator of any offset lithographic printing press shall monitor the alcohol concentration of the fountain solution with a refractometer that is corrected for temperature at least once per 8-hour shift or once per batch, whichever is longer. The refractometer shall have a visual, analog, or digital readout with an accuracy of 0.5%. A standard solution shall be used to calibrate the refractometer for the type of alcohol used in the fountain. Alternatively, the refractometer shall be standardized with measurements performed to determine compliance, according to the procedures described in 47.5.4.1 and 47.5.4.2 of this regulation.

47.6.4.2 Alternatively, the owner or operator of any offset lithographic printing press shall monitor the alcohol concentration of the fountain solution with a hydrometer equipped with a temperature correction at least once per eight-hour shift or once per batch, whichever is longer. The hydrometer shall have a visual, analog, or digital readout with an accuracy of 0.5%. A standard solution shall be used to calibrate the hydrometer for the type of alcohol used in the fountain. Alternatively, the hydrometer shall be standardized with measurements performed to determine compliance, according to the procedures described in 47.5.4.1 and 47.5.4.2 of this regulation.

47.6.4.3 The VOC content of the fountain solution may be monitored with a conductivity meter if it is determined that a refractometer or hydrometer cannot be used for the type of VOCs in the fountain solution. The conductivity meter reading for the fountain solution shall be referenced to the conductivity of the incoming water.

47.6.4.4 If, through recordkeeping for a period of 6 months or more, the printing process is shown to consistently meet the requirements in 47.3.2~~.4~~ and 47.5.4 of this regulation, the monitoring requirement may be waived or extended to a longer period of time upon prior approval by the Department.

47.6.5 Requirements for Monitoring Fountain Solution Temperature. On and after [insert the effective date of this revision of 47.0]:

47.6.5.1 The owner or operator of any offset lithographic printing press using refrigeration equipment on the fountain solution shall install, maintain, and continuously operate a temperature monitor of the fountain solution reservoir.

47.6.5.2 The temperature monitor shall be attached to a continuous recording device such as a strip chart, recorder, or computer.

47.6.6 Requirements for Monitoring Cleaning Solution. On and after [insert the effective date of this revision of 47.0], ~~F~~for any offset lithographic printing press or any letterpress printing press with continuous cleaning equipment, flow meters shall be used to monitor the water and cleaning solution flow rates. The flow meters shall be calibrated so that the VOC content of the mixed solution is accurately measured to fulfill the requirements of 47.3.3 of this regulation.

47.6.7 Requirements for Monitoring Other Key Parameters. On and after [insert the effective date of this revision of 47.0], ~~T~~the owner or operator of any offset lithographic printing press or any letterpress printing press shall record daily, and make available to the Department within 45 calendar days upon the Department's verbal or written request, the following key parameters:

47.6.7.1 The type of control device operating on ~~the~~ any heatset offset lithographic printing press or any heatset letterpress printing press and the operating parameters specified in 47.5.3 of this regulation.

47.6.7.2 The equipment standard selected to comply with the requirements listed in 47.3.2.1 through 47.3.2.4 and 47.3.3 of this regulation.

47.6.7.3 The VOC content of the fountain solutions and cleaning solutions, to comply with the requirements listed in 47.5.4, 47.6.4, and 47.6.6 of this regulation.

47.6.7.4 The temperature of the fountain solution, to comply with the requirements listed in 47.6.5 of this regulation, if applicable.

47.6.7.5 For manual cleaning methods, the amount of cleaning solution and the amount of water added per batch of cleaning solution mixed.

47.6.7.6 For automatic cleaning methods, the flow rates of water and cleaning solution concentrate, as specified in 47.6.6 of this regulation.

47.6.7.7 Corrective actions taken when exceedances of any parameters monitored according to the requirements of 47.4 or 47.5 of this regulation, occur.