TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: EMISSIONS STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

PART 219
ORGANIC MATERIAL EMISSION STANDARDS AND LIMITATIONS FOR THE METRO EAST AREA

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SUBPART TT: OTHER EMISSION UNITS

SUBPART UU: RECORDKEEPING AND REPORTING

AUTHORITY: Implementing Section 10 and authorized by Sections 27, 28 and 28.5 of the Environmental Protection Act [415 ILCS 5/10, 27, 28 and 28.5].

SOURCE: Adopted in R91-8 at 15 Ill. Reg. 12491, effective August 16, 1991; amended in R91-24 at 16 Ill. Reg. 13597, effective August 24, 1992; amended in R91-30 at 16 Ill. Reg. 13883, effective August 24, 1992; emergency amendment in R93-12 at 17 Ill. Reg. 8295, effective May 24, 1993, for a maximum of 150 days; amended in R93-9 at 17 Ill. Reg. 16918, effective September 27, 1993 and October 21, 1993; amended in R93-28 at 18 Ill. Reg. 4242, effective March 3, 1994; amended in R94-12 at 18 Ill. Reg. 14987, effective September 21, 1994; amended in R94-15 at 18 Ill. Reg. 16415, effective October 25, 1994; amended in R94-16 at 18 Ill. Reg. 16980, effective November 15, 1994; emergency amendment in R95-10 at 19 Ill. Reg. 3059, effective February 28, 1995, for a maximum of 150 days; amended in R94-21, R94-31 and R94-32 at 19 Ill. Reg. 6958, effective May 9, 1995; amended in R94-33 at 19 Ill. Reg. 7385, effective May 22, 1995; amended in R96-2 at 20 Ill. Reg. 3848, effective February 15, 1996; amended in R96-13 at 20 Ill. Reg. 14462, effective October 28, 1996; amended in R97-24 at 21 Ill. Reg. 7721, effective June 9, 1997; amended in R97-31 at 22 Ill. Reg. 3517, effective February 2, 1998; amended in R04-12/20 at 30 Ill. Reg. 9799, effective May 15, 2006; amended in R06-21 at 31 Ill. Reg. 7110, effective April 30, 2007; amended in R10-10 at 34 Ill. Reg. 5392, effective March 23, 2010; amended in R10-8 at 34 Ill. Reg. 9253, effective June 25, 2010; amended in R10-20 at 34 Ill. Reg. 14326, effective September 14, 2010; amended in R10-8(A) at 35 Ill. Reg. 496, effective December 21, 2010; amended in R11-23 at 35 Ill. Reg. 13676, effective July 27, 2011; amended in R11-23(A), at 35 Ill. Reg. 18830, effective October 25, 2011); amended in R12-24 at 37 Ill. Reg. 1722, effective January 28, 2013, amended in R13-18 at 38 Ill. Reg. 1061, effective December 23, 2013.

SUBPART A: GENERAL PROVISIONS

Section 219.100 Introduction

a) This Part contains standards and limitations for emissions of organic material and volatile organic material from stationary sources located in the Metro East area, which is comprised of Madison, Monroe, and St. Clair Counties.

b) Sources subject to this Part may be subject to the following:

1) Permits required under 35 Ill. Adm. Code 201 and

2) Air quality standards under 35 Ill. Adm. Code 243.

c) This part is divided into Subparts which are grouped as follows:

1) Subpart A: General Provisions;

2) Subparts B-F: Emissions from equipment and operations in common to more than one industry;

3) Subpart G: Emissions from use of organic material;

4) Subparts H-RR: Rules for various industry groups.

5) Subpart TT: Rules for emission units not otherwise addressed.

6) Subpart UU: Recordkeeping and reporting for equipment and operation addressed by Subparts PP, QQ, RR and TT.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.101 Savings Clause

a) Every owner or operator of an emission unit formerly subject to 35 Ill. Adm. Code 215 shall have complied with its standards and limitations by the dates and schedules applicable to the emission unit in accordance with Part 215 or upon initial start-up. All compliance dates or schedules found in Part 215 are not superseded by this Part and remain in full force and effect.

b) Nothing in this Part as it is amended from time to time shall relieve the owner or operator of a source subject to the requirements of this Part of the obligation to have complied with applicable requirements by the compliance dates set forth in Section 219.106 of this Subpart or in specific Subparts of this Part even though those compliance dates have been superseded by subsequent amendments.

(Source: Amended at 18 Ill. Reg. 16415, effective October 25, 1994)

Section 219.102 Abbreviations and Conversion Factors

The abbreviations and conversion factors of 35 Ill. Adm. Code 211 apply to this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.103 Applicability

The provisions of this Part shall apply to all sources located in Madison, Monroe, and St. Clair Counties.

Section 219.104 Definitions

The definitions of 35 Ill. Adm. Code 211 apply to this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.105 Test Methods and Procedures

a) Coatings, Inks and Fountain Solutions
The following test methods and procedures shall be used to determine compliance of as applied coatings, inks, and fountain solutions with the limitations set forth in this Part.

1) Sampling: Samples collected for analyses shall be one-liter taken into a one-liter container at a location and time such that the sample will be representative of the coating as applied (i.e., the sample shall include any dilution solvent or other VOM added during the manufacturing process). The container must be tightly sealed immediately after the sample is taken. Any solvent or other VOM added after the sample is taken must be measured and accounted for in the calculations in subsection (a)(3) of this Section. For multiple package coatings, separate samples of each component shall be obtained. A mixed sample shall not be obtained as it will cure in the container. Sampling procedures shall follow the guidelines presented in:

A) ASTM D 3925-81 (1985) standard practice for sampling liquid paints and related pigment coating. This practice is incorporated by reference in Section 219.112 of this Part.

B) ASTM E 300-86 standard practice for sampling industrial chemicals. This practice is incorporated by reference in Section 219.112 of this Part.

2) Analyses: The applicable analytical methods specified below shall be used to determine the composition of coatings, inks, or fountain solutions as applied.

A) Method 24 of 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part, shall be used to determine the VOM content and density of coatings. If it is demonstrated to the satisfaction of the Agency and the USEPA that plant coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern.

B) Method 24A of 40 CFR 60, appendix A, incorporated by reference in Section 219.112, shall be used to determine the VOM content and density of rotogravure printing inks and related coatings. If it is demonstrated to the satisfaction of the Agency and USEPA that the plant coating formulation data are equivalent to Method 24A results, formulation data may be used. In the event of any inconsistency between a Method 24A test and formulation data, the Method 24A test will govern.

C) The following ASTM methods are the analytical procedures for determining VOM:

i) ASTM D 1475-85: Standard test method for density of paint, varnish, lacquer and related products. This test method is incorporated by reference in Section 219.112 of this Part.

ii) ASTM D 2369-87: Standard test method for volatile content of a coating. This test method is incorporated by reference in Section 219.112 of this Part.

iii) ASTM D 3792-86: Standard test method for water content of water-reducible paints by direct injection into a gas chromatograph. This test method is incorporated by reference in Section 219.112 of this Part.

iv) ASTM D 4017-81 (1987): Standard test method for water content in paints and paint materials by the Karl Fischer method. This test method is incorporated by reference in Section 219.112 of this Part.

v) ASTM D 4457-85: Standard test method for determination of dichloromethane and 1,1,1, trichloroethane in paints and coatings by direct injection into a gas chromatograph. (The procedure delineated above can be used to develop protocols for any compounds specifically exempted from the definition of VOM.) This test method is incorporated by reference in Section 219.112 of this Part.

vi) ASTM D 2697-86: Standard test method for volume non-volatile matter in clear or pigmented coatings. This test method is incorporated by reference in Section 219.112 of this Part.

vii) ASTM D 3980-87: Standard practice for interlaboratory testing of paint and related materials. This practice is incorporated by reference in Section 219.112 of this Part.

viii) ASTM E 180-85: Standard practice for determining the precision of ASTM methods for analysis of and testing of industrial chemicals. This practice is incorporated by reference in Section 219.112 of this Part.

ix) ASTM D 2372-85: Standard method of separation of vehicle from solvent-reducible paints. This method is incorporated by reference in Section 219.112 of this Part.

D) Use of an adaptation to any of the analytical methods specified in (a)(2)(A), (B), and (C) of this Section may not be used unless approved by the Agency and USEPA. An owner or operator must submit sufficient documentation for the Agency and USEPA to find that the analytical methods specified in subsections (a)(2)(A), (B), and (C) of this Section will yield inaccurate results and that the proposed adaptation is appropriate.

3) Calculations: Calculations for determining the VOM content, water content and the content of any compounds which are specifically exempted from the definition of VOM of coatings, inks and fountain solutions as applied shall follow the guidance provided in the following documents:

A) "A Guide for Surface Coating Calculation", EPA-340/1-86-016, incorporated by reference in Section 219.112 of this Part.

B) "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink and Other Coatings" (revised June 1986), EPA-450/3-84-019, incorporated by reference in Section 219.112 of this Part.

C) "A Guide for Graphic Arts Calculations", August 1988, EPA-340/1-88-003, incorporated by reference in Section 219.112 of this Part.

b) Automobile or Light-Duty Truck Test Protocol

1) The protocol for testing, including determining the transfer efficiency of coating applicators, at primer surfacer operations and topcoat operations at an automobile or light-duty truck assembly source shall follow the procedures in the following:

A) Prior to May 1, 2012: "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations" ("topcoat protocol"), December 1988, EPA-450/3-88-018, incorporated by reference in Section 219.112 of this Part.

B) On and after May 1, 2012: "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and

Light-Duty Truck Primer-Surfacer and Topcoat Operations" (topcoat protocol), September 2008, EPA-453/R-08-002, incorporated by reference in Section 219.112 of this Part.

2) Prior to testing pursuant to the applicable topcoat protocol, the owner or operator of a coating operation subject to the topcoat or primer surfacer limit in Section 219.204(a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(E) shall submit a detailed testing proposal specifying the method by which testing will be conducted and how compliance will be demonstrated consistent with the applicable topcoat protocol. The proposal shall include, at a minimum, 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, the method for determining the analytic VOM content of as applied coatings and the formulation solvent content of as applied coatings, and a description of the records of coating VOM content as applied and coating's usage that will be kept to demonstrate compliance. Upon approval of the proposal by the Agency and USEPA, the compliance demonstration for a coating line may proceed.

c) Capture System Efficiency Test Protocols

1) Applicability
The requirements of subsection (c)(2) of this Section shall apply to all VOM emitting process emission units employing capture equipment (e.g., hoods, ducts), except those cases noted in this subsection (c)(1).

A) If an emission unit is equipped with (or uses) a permanent total enclosure (PTE) that meets Agency and USEPA specifications, and which directs all VOM to a control device, then the emission unit is exempted from the requirements described in subsection (c)(2) of this Section. The Agency and USEPA specifications to determine whether a structure is considered a PTE are given in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. In this instance, the capture efficiency is assumed to be 100 percent and the emission unit is still required to measure control efficiency using appropriate test methods as specified in subsection (d) of this Section.

B) If an emission unit is equipped with (or uses) a control device designed to collect and recover VOM (e.g., carbon adsorber), an explicit measurement of capture efficiency is not necessary provided that the conditions given below are met. The overall control of the system can be determined by directly comparing the input liquid VOM to the recovered liquid VOM. The general procedure for use in this situation is given in 40 CFR 60.433, incorporated by reference in Section 219.112 of this Part, with the following additional restrictions:

i) The source owner or operator shall obtain data each operating day for the solvent usage and solvent recovery to permit the determination of the solvent recovery efficiency of the system each operating day using a 7-day rolling period. The recovery efficiency for each operating day is computed as the ratio of the total recovered solvent for that day and the most recent prior 6 operating days to the total solvent usage for the same 7-day period used for the recovered solvent, rather than a 30-day weighted average as given in 40 CFR 60.433 incorporated by reference in Section 219.112 of this Part. This ratio shall be expressed as a percentage. The ratio shall be computed within 72 hours following each 7-day period. A source that believes that the 7-day rolling period is not appropriate may use an alternative multi-day rolling period not to exceed 30 days, with the approval of the Agency and USEPA. In addition, the criteria in subsection (c)(1)(B)(ii) or (c)(1)(B)(iii) must be met.

ii) The solvent recovery system (i.e., capture and control system) must be dedicated to a single coating line, printing line, or other discrete activity that by itself is subject to an applicable VOM emission standard.

iii) However if the solvent recovery system controls more than one coating line, printing line or other discrete activity that by itself is subject to an applicable VOM emission standard, the overall control (i.e., the total recovered VOM divided by the sum of liquid VOM input from all lines and other activities venting to the control system) must meet or exceed the most stringent standard applicable to any line or other discrete activity venting to the control system.

2) Capture Efficiency Protocols
The capture efficiency of an emission unit shall be measured using one of the protocols given below. Appropriate test methods to be utilized in each of the capture efficiency protocols are described in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. Any error margin associated with a test method or protocol may not be incorporated into the results of a capture efficiency test. If these techniques are not suitable for a particular process, then an alternative capture efficiency protocol may be used, pursuant to the provisions of Section 219.108(b) of this Part.

A) Gas/gas method using temporary total enclosure (TTE). The Agency and USEPA specifications to determine whether a temporary enclosure is considered a TTE are given in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{G_w}{G_w + F_w}$$

where:

CE = capture efficiency, decimal fraction;

G_w = mass of VOM captured and delivered to control device using a TTE;

F_w = mass of uncaptured VOM that escapes from a TTE.

Method 204B or 204C contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain G_w. Method 204D in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_w.

B) Liquid/gas method using TTE. The Agency and USEPA specifications to determine whether a temporary enclosure is considered a TTE are given in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{L - F_W}{L}$$

where:

CE = capture efficiency, decimal fraction;

L = mass of liquid VOM input to process emission unit;

F_w = mass of uncaptured VOM that escapes from a TTE.

Method 204A or 204F contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain L. Method 204in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_w.

C) Gas/gas method using the building or room (building or room enclosure), in which the affected coating line, printing line or other emission unit is located, as the enclosure, as determined by Method 204 of appendix M of 40 CFR 51, incorporated by reference in

Section 219.112 of this Part, and in which "F_B" and "G" are measured while operating only the affected line or emission unit. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{G}{G + F_B}$$

where:

CE = capture efficiency, decimal fraction;

G = mass of VOM captured and delivered to control device;

F_B = mass of uncaptured VOM that escapes from building enclosure.

Method 204B or 204C contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain G. Method 204E in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_B.

D) Liquid/gas method using the building or room (building or room enclosure), in which the affected coating line, printing line or other emission unit is located, as the enclosure as determined by Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, and in which "F_B" and "L" are measured while operating only the affected line emission unit. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{L - F_B}{L}$$

where:

CE = capture efficiency, decimal fraction;

L = mass of liquid VOM input to process emission unit;

F_B = mass of uncaptured VOM that escapes from building enclosure.

Method 204A or 204F contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain L. Method 204E in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_B.

E) Mass balance using Data Quality Objective (DQO) or Lower Confidence Limit (LCL) protocol. For a liquid/gas input where an owner or operator is using the DQO/LCL protocol and not using an enclosure as described in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, the VOM content of the liquid input (L) must be determined using Method 204A or 204F in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The VOM content of the captured gas stream (G) to the control device must be determined using Method 204B or 204C in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The results of capture efficiency calculations (G/L) must satisfy the DQO or LCL statistical analysis methodology as described in Section 3 of USEPA's "Guidelines for Determining Capture Efficiency", incorporated by reference at Section 219.112 of this Part. Where capture efficiency testing is done to determine emission reductions for the purpose of establishing emission credits for offsets, shutdowns, and trading, the LCL protocol cannot be used for these applications. In enforcement cases, the LCL protocol cannot confirm non-compliance; capture efficiency must be determined using a protocol under subsection (c)(2)(A), (B), (C) or (D) of this Section, the DQO protocol of this subsection (c)(2)(E), or an alternative protocol pursuant to Section 219.108(b) of this Part.

BOARD NOTE: Where LCL was used in testing emission units that are the subject of later requests for establishing emission credits for offsets, shutdowns, and trading, prior LCL results may not be relied upon to determine the appropriate amount of credits. Instead, to establish the appropriate amount of credits, additional testing may be required that would satisfy the protocol of Section 219.105(c)(2)(A), (B), (C) or (D), the DQO protocol of Section 219.105(c)(2)(E), or an alternative protocol pursuant to Section 219.108(b) of this Part.

3) Simultaneous testing of multiple lines or emission units with a common control device. If an owner or operator has multiple lines sharing a common control device, the capture efficiency of the lines may be tested simultaneously, subject to the following provisions:

A) Multiple line testing must meet the criteria of Section 4 of USEPA's "Guidelines for Determining Capture Efficiency", incorporated by reference at Section 219.112 of this Part;

B) The most stringent capture efficiency required for any individual line or unit must be met by the aggregate of lines or units; and

C) Testing of all the lines of emission units must be performed with the same capture efficiency test protocol.

4) Recordkeeping and Reporting

A) All owners or operators affected by this subsection must maintain a copy of the capture efficiency protocol submitted to the Agency and the USEPA on file. All results of the appropriate test methods and capture efficiency protocols must be reported to the Agency within 60 days after the test date. A copy of the results must be kept on file with the source for a period of 3 years.

B) If any changes are made to capture or control equipment, then the source is required to notify the Agency and the USEPA of these changes and a new test may be required by the Agency or the USEPA.

C) The source must notify the Agency 30 days prior to performing any capture efficiency or control test. At that time, the source must notify the Agency which capture efficiency protocol and control device test methods will be used. Notification of the actual date and expected time of testing must be submitted a minimum of 5 working days prior to the actual date of the test. The Agency may at its discretion accept notification with shorter advance notice provided that such arrangements do not interfere with the Agency's ability to review the protocol and/or observe testing.

D) Sources utilizing a PTE must demonstrate that this enclosure meets the requirement given in Method 204 in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, for a PTE during any testing of their control device.

E) Sources utilizing a TTE must demonstrate that their TTE meets the requirements given in Method 204 in appendix M or 40 CFR 51, incorporated by reference in Section 219.112 of this Part, for a TTE during any testing of their control device. The source must also provide documentation that the quality assurance criteria for a TTE have been achieved.

F) Any source utilizing the DQO or LCL protocol must submit the following information to the Agency with each test report:

i) A copy of all test methods, Quality Assurance/Quality Control procedures, and calibration procedures to be used from those described in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part;

ii) A table with information on each sample taken, including the sample identification and the VOM content of the sample;

iii) The quantity of material used for each test run;

iv) The quantity of captured VOM for each test run;

v) The capture efficiency calculations and results for each test run;

vi) The DQO and/or LCL calculations and results; and

vii) The Quality Assurance/Quality Control results, including how often the instruments were calibrated, the calibration results, and the calibration gases used.

d) Control Device Efficiency Testing and Monitoring

1) The control device efficiency shall be determined by simultaneously measuring the inlet and outlet gas phase VOM concentrations and gas volumetric flow rates in accordance with the gas phase test methods specified in subsection (f) of this Section.

2) An owner or operator:

A) That uses an afterburner or carbon adsorber to comply with any Section of this Part shall use Agency and USEPA approved continuous monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use except as provided in subsection (d)(3) of this Section. The continuous monitoring equipment must monitor the following parameters:

i) For each afterburner which does not have a catalyst bed, the combustion chamber temperature of each afterburner.

ii) For each afterburner which has a catalyst bed, commonly known as a catalytic afterburner, the temperature rise across each catalytic afterburner bed or VOM concentration of exhaust.

iii) For each carbon adsorber, the VOM concentration of each carbon adsorption bed exhaust or the exhaust of the bed next in sequence to be desorbed.

B) Must install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring device, such as a strip chart, recorder or computer, having an accuracy of ± 1 percent of the temperature measured, expressed in degrees Celsius or ± 0.5° C, whichever is greater.

C) Of an automobile or light-duty truck primer surfacer operation or topcoat operation subject to subsection (d)(2)(A) shall keep a separate record of the following data for the control devices, unless alternative provisions are set forth in a permit pursuant to Title V of the Clean Air Act:

i) For thermal afterburners for which combustion chamber temperature is monitored, all 3-hour periods of operation in which the average combustion temperature was more than 28° C (50° F) below the average combustion temperature measured during the most recent performance test that demonstrated that the operation was in compliance.

ii) For catalytic afterburners for which temperature rise is monitored, all 3-hour periods of operation in which the average gas temperature before the catalyst bed is more than 28° C (50° F) below the average gas temperature immediately before the catalyst bed measured during the most recent performance test that demonstrated that the operation was in compliance.

iii) For catalytic afterburners and carbon adsorbers for which VOM concentration is monitored, all 3-hour periods of operation during which the average VOM concentration or the reading of organics in the exhaust gases is more than 20 percent greater than the average exhaust gas concentration or reading measured by the organic monitoring device during the most recent determination of the recovery efficiency of a carbon adsorber or performance test for a catalytic afterburner, which determination or test that demonstrated that the operation was in compliance.

3) An owner or operator that uses a carbon adsorber to comply with Section 219.401 of this Part may operate the adsorber during periods of monitoring equipment malfunction, provided that:

A) The owner or operator notifies in writing the Agency and USEPA, within 10 days after the conclusion of any 72 hour period during which the adsorber is operated and the associated monitoring equipment is not operational, of such monitoring equipment failure and provides the duration of the malfunction, a description of the repairs made to the equipment, and the total to date of all hours in the calendar year during which the adsorber was operated and the associated monitoring equipment was not operational;

B) During such period of malfunction the adsorber is operated using timed sequences as the basis for periodic regeneration of the adsorber;

C) The period of such adsorber operation does not exceed 360 hours in any calendar year without the approval of the Agency and USEPA; and

D) The total of all hours in the calendar year during which the adsorber was operated and the associated monitoring equipment was not operational shall be reported, in writing, to the Agency and USEPA by January 31 of the following calendar year.

e) Overall Efficiency

1) The overall efficiency of the emission control system shall be determined as the product of the capture system efficiency and the control device efficiency or by the liquid/liquid test protocol as specified in 40 CFR 60.433, incorporated by reference in Section 219.112 of this Part, (and revised by subsection (c)(1)(B) of this Section) for each solvent recovery system. In those cases in which the overall efficiency is being determined for an entire line, the capture efficiency used to calculate the product of the capture and control efficiency is the total capture efficiency over the entire line.

2) For coating lines which are both chosen by the owner or operator to comply with Section 219.207(a), (d), (e), (f), (g), (l), or (m) of this Part by the alternative in Section 219.207(b)(2) of this Part and meet the criteria allowing them to comply with Section 219.207 instead of Section 219.204 of this Part, the overall efficiency of the capture system and control device, as determined by the test methods and procedures specified in subsections (c), (d) and (e)(1) of this Section, shall be no less than the equivalent overall efficiency which shall be calculated by the following equation:

$$E = \frac{VOM_a - VOM_l}{VOM_a} \times 100$$

where:

E = Equivalent overall efficiency of the capture system and control device as a percentage;

VOM_a = Actual VOM content of a coating, or the daily-weighted average VOM content of two or more coatings (if more than one coating is used), as applied to the subject coating line as determined by the applicable test methods and procedures specified in subsection (a)(4)(i) of this Part in units of kg

VOM/1 (lb VOM/gal) of coating solids as applied;

VOM_1 = The VOM emission limit specified in Sections 219.204 or 219.205 of this Part in units of kg VOM/1 (lb VOM/gal) of coating solids as applied.

f) Volatile Organic Material Gas Phase Source Test Methods
The methods in 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part delineated below shall be used to determine control device efficiencies.

1) 40 CFR 60, appendix A, Method 18, 25 or 25A, incorporated by reference in Section 219.112 of this Part as appropriate to the conditions at the site, shall be used to determine VOM concentration. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in subsections (f)(1)(A) and (B) below, the test shall consist of three separate runs, each lasting a minimum of 60 min, unless the Agency and the USEPA determine that process variables dictate shorter sampling times.

A) When the method is to be used to determine the efficiency of a carbon adsorption system with a common exhaust stack for all the individual adsorber vessels, the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all the individual adsorber vessels.

B) When the method is to be used to determine the efficiency of a carbon adsorption system with individual exhaust stacks for each adsorber vessel, each adsorber vessel shall be tested individually. The test for each adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

2) 40 CFR 60, appendix A, Method 1 or 1A, incorporated by reference in Section 219.112 of this Part, shall be used for sample and velocity traverses.

3) 40 CFR 60, appendix A, Method 2, 2A, 2C or 2D, incorporated by reference in Section 219.112 of this Part, shall be used for velocity and volumetric flow rates.

4) 40 CFR 60, appendix A, Method 3, incorporated by reference in Section 219.112 of this Part, shall be used for gas analysis.

5) 40 CFR 60, appendix A, Method 4, incorporated by reference in Section 219.112 of this Part, shall be used for stack gas moisture.

6) 40 CFR 60, appendix A, Methods 2, 2A, 2C, 2D, 3 and 4, incorporated by

reference in Section 219.112 of this Part, shall be performed, as applicable, at least twice during each test run.

7) Use of an adaptation to any of the test methods specified in subsections (f)(1), (2), (3), (4), (5) and (6) of this Section may not be used unless approved by the Agency and the USEPA on a case by case basis. An owner or operator must submit sufficient documentation for the Agency and the USEPA to find that the test methods specified in subsections (f)(1), (2), (3), (4), (5) and (6) of this Section will yield inaccurate results and that the proposed adaptation is appropriate.

g) Leak Detection Methods for Volatile Organic Material
Owners or operators required by this Part to carry out a leak detection monitoring program shall comply with the following requirements:

1) Leak Detection Monitoring

A) Monitoring shall comply with 40 CFR 60, appendix A, Method 21, incorporated by reference in Section 219.112 of this Part.

B) The detection instrument shall meet the performance criteria of Method 21.

C) The instrument shall be calibrated before use on each day of its use by the methods specified in Method 21.

D) Calibration gases shall be:

i) Zero air (less than 10 ppm of hydrocarbon in air); and

ii) A mixture of methane or n-hexane and air at a concentration of approximately, but no less than, 10,000 ppm methane or n-hexane.

E) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21.

2) When equipment is tested for compliance with no detectable emissions as required, the test shall comply with the following requirements:

A) The requirements of subsections (g)(1)(A) through (g)(1)(E) of this Section shall apply.

B) The background level shall be determined as set forth in Method 21.

3) Leak detection tests shall be performed consistent with:

A) "APTI Course SI 417 controlling Volatile Organic Compound Emissions from Leaking Process Equipment", EPA-450/2-82-015, incorporated by reference in Section 219.112 of this Part.

B) "Portable Instrument User's Manual for Monitoring VOM Sources", EPA-340/1-86-015, incorporated by reference in Section 219.112 of this Part.

C) "Protocols for Generating Unit-Specific Emission Estimates for Equipment Leaks of VOM and VHAP", EPA-450/3-88-010, incorporated by reference in Section 219.112 of this Part.

D) "Petroleum Refinery Enforcement Manual", EPA-340/1-80-008, incorporated by reference in Section 219.112 of this Part.

h) Bulk Gasoline Delivery System Test Protocol

1) The method for determining the emissions of gasoline from a vapor recovery system are delineated in 40 CFR 60, subpart XX, section 60.503, incorporated by reference in Section 219.112 of this Part.

2) Other tests shall be performed consistent with:

A) "Inspection Manual for Control of Volatile Organic Emissions from Gasoline Marketing Operations: Appendix D", EPA-340/1-80-012, incorporated by reference in Section 219.112 of this Part.

B) "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals: Appendix A", EPA-450/2-77-026, incorporated by reference in Section 219.112 of this Part.

i) Notwithstanding other requirements of this Part, upon request of the Agency where it is necessary to demonstrate compliance, an owner or operator of an emission unit which is subject to this Part shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in this Part. Nothing in this Section shall limit the authority of the USEPA pursuant to the Clean Air Act, as amended, to require testing.

(Source: Amended at 38 Ill. Reg. 1061, effective December 23, 2013)

Section 219.106 Compliance Dates

a) Except as provided in subsection (b), (c), (d), or (e), compliance with the requirements of this Part is required by May 15, 1992, consistent with the provisions of Section 219.103 of this Part.

b) As this Part is amended from time to time, compliance dates included in the specific Subparts supersede the requirements of this Section, except as limited by

Section 219.101(b) of this Subpart.

c) Any owner or operator of a source subject to the requirements of Section 219.204(c)(2), 219.204(g)(2), or 219.204(h)(2) of this Part shall comply with the applicable requirements in the applicable subsections, as well as all applicable requirements in Sections 219.205 through 219.214 and 219.218, by May 1, 2012.

d) Any owner or operator of a source subject to the requirements of Section 219.204(o) of this Part shall comply with the requirements in Section 219.204(o), as well as all applicable requirements in Sections 219.205 through 219.211, 219.214, and 219.217 by August 1, 2010.

e) Any owner or operator of a source subject to the requirements of Section 219.204(a)(2) or 219.204(q) of this Part shall comply with the applicable requirements in those Sections, as well as all applicable requirements in Sections 219.205 through 219.214 and 219.219, by May 1, 2011.

(Source: Amended at 34 Ill. Reg. 14326, effective September 14, 2010)

Section 219.107 Operation of Afterburners

The operation of any natural gas fired afterburner and capture system used to comply with this Part is not required during the period of November 1 of any year to April 1 of the following year provided that the operation of such devices is not required for purposes of occupational safety or health, or for the control of toxic substances, odor nuisances, or other regulated pollutants.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.108 Exemptions, Variations, and Alternative Means of Control or Compliance Determinations

Notwithstanding the provisions of any other Sections of this Part, any exemptions, variations or alternatives to the control requirements, emission limitations, or test methods set forth in this Part shall be effective only when approved by the Agency and approved by the USEPA as a SIP revision.

Section 219.109 Vapor Pressure of Volatile Organic Liquids

a) If the VOL consists of only a single compound, the vapor pressure shall be determined by ASTM Method D2879-86 (incorporated by reference in Section 219.112 of this Part) or the vapor pressure may be obtained from a publication such as: Boublik, T., V. Fried and E. Hala, "The Vapor Pressure of Pure Substances," Elsevier Scientific Publishing Co., New York (1973); Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company (1984); CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company (1986-87); and Lange's Handbook of Chemistry, John A. Dean, editor, McGraw-Hill Book Company (1985).

b) If the VOL is a mixture, the vapor pressure shall be determined by ASTM Method

D2879-86 (incorporated by reference in Section 219.112 of this Part) or by the following equation:

$$P_{vol} = \sum_{i=1}^{n} P_i X_i$$

where:

P_{vol} = Total vapor pressure of the mixture;

n = Number of components in the mixture;

I = Subscript denoting an individual component;

P_i = Vapor pressure of a component determined in accordance with subsection (a) of this Section;

X_i = Mole fraction of the component in the total mixture.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.110 Vapor Pressure of Organic Material or Solvent

a) If the organic material or solvent consists of only a single compound, the vapor pressure shall be determined by ASTM Method D2879-86 (incorporated by reference in Section 219.112 of this Part) or the vapor pressure may be obtained from a publication such as: Boublik, T., V. Fried and E. Hala, "The Vapor Pressure of Pure Substances," Elsevier Scientific Publishing Co., New York (1973); Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company (1984); CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company (1986-87); and Lange's Handbook of Chemistry, John A. Dean, editor, McGraw-Hill Book Company (1985).

b) If the organic material or solvent is in a mixture made up of both organic material compounds and compounds which are not organic material, the vapor pressure shall be determined by the following equation

$$P_{om} = \frac{\sum_{i=1}^{n} P_i X_i}{\sum_{i=1}^{n} X_i}$$

where:

P_{om} = Total vapor pressure of the portion of the mixture which is composed of organic material;

n = Number of organic material components in the mixture;

I = Subscript denoting an individual component;

P_i = Vapor pressure of an organic material component determined in accordance with subsection (a) of this Section;

X_i = Mole fraction of the organic material component of the total organic mixture.

c) If the organic material or solvent is in a mixture made up of only organic material compounds, the vapor pressure shall be determined by ASTM Method D2879-86 (incorporated by reference in Section 219.112 of this Part) or by the above equation.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.111 Vapor Pressure of Volatile Organic Material

a) If the VOM consists of only a single compound, the vapor pressure shall be determined by ASTM Method D2879-86 incorporated by reference in Section 219.112 of this Part) or the vapor pressure may be obtained from a publication such as: Boublik, T., V. Fried and E. Hala, "The Vapor Pressure of Pure Substances," Elsevier Scientific Publishing Co., New York (1973); Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company (1984); CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company (1986-87); and Lange's Handbook of Chemistry, John A. Dean, editor, McGraw-Hill Book Company (1985.

b) If the VOM is in a mixture made up of both VOM compounds and compounds which are not VOM, the vapor pressure shall be determined by the following equation:

$$P_{vom} = \frac{\sum_{i=1}^{n} P_i X_i}{\sum_{i=1}^{n} X_i}$$

where:

P_{vom} = Total vapor pressure of the portion of the mixture which is composed of VOM;

n = Number of VOM components in the mixture;

i = Subscript denoting an individual component;

P_i = Vapor pressure of a VOM component determined in accordance with subsection (a) of this Section;

X_i = Mole fraction of the VOM component of the total organic mixture.

c) If the VOM is in a mixture made up of only VOM compounds, the vapor pressure shall be determined by ASTM Method D2879-86 (incorporated by reference in Section 219.112 of this Part) or by the above equation.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.112 Incorporations by Reference

The following materials are incorporated by reference and do not contain any subsequent additions or amendments:

a) American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken PA 19428-9555

1) ASTM D 2879-86

2) ASTM D 323-08

3) ASTM D 86-82

4) ASTM D 369-69 (1971)

5) ASTM D 396-69

6) ASTM D 2880-71

7) ASTM D 975-68

8) ASTM D 3925-81 (1985)

9) ASTM E 300-86

10) ASTM D 1475-85

11) ASTM D 2369-87

12) ASTM D 3792-86

13) ASTM D 4017-81 (1987)

14) ASTM D 4457-85

15) ASTM D 2697-86

16) ASTM D 3980-87

17) ASTM E 180-85

18) ASTM D 2372-85

19) ASTM D 97-66

20) ASTM E 168-87 (1977)

21) ASTM E 169-87

22) ASTM E 260-91

23) ASTM D 2504-83
24) ASTM D 2382-83

b) Standard Industrial Classification Manual, published by Executive Office of the President, Office of Management and Budget, Washington, D.C., 1987.

c) American Petroleum Institute Bulletin 2517, "Evaporation Loss From Floating Roof Tanks", Second ed., February 1980.

d) 40 CFR 60 (July 1, 1991).

e) 40 CFR 61 (July 1, 1991).

f) 40 CFR 50 (July 1, 1991).

g) 40 CFR 51 (July 1, 1991) and 40 CFR 51, appendix M, Methods 204-204F (July 1, 1999).

h) 40 CFR 52 (July 1, 1991).

i) "A Guide for Surface Coating Calculation", July 1986, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-86-016.

j) "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink and Other Coating" (revised June 1986), United States Environmental Protection Agency, Washington D.C., EPA-450/3-84-019.

k) "A Guide for Graphic Arts Calculations", August 1988, United States Environmental Protection Agency, Washington D.C., EPA-340/1-88-003.

l) "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations", December 1988, United States Environmental Protection Agency, Washington D.C., EPA-450/3-88-018.

m) "Control of Volatile Organic Emissions from Manufacturing of Synthesized Pharmaceutical Products", December 1978, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-78-029.

n) "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", December 1978, Appendix B, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-78-051.

o) "Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners", September 1982, United States Environmental Protection Agency, Washington, D.C., EPA-450/3-82-009.

p) "APTI Course SI417 Controlling Volatile Organic Compound Emissions from Leaking Process Equipment", 1982, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-82-015.

q) "Portable Instrument User's Manual for Monitoring VOM Sources", June 1986, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-86-015.

r) "Protocols for Generating Unit-Specific Emission Estimates for Equipment Leaks of VOM and VHAP", October 1988, United States Environmental Protection Agency, Washington, D.C., EPA-450/3-88-010.

s) "Petroleum Refinery Enforcement Manual", March 1980, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-80-008.

t) "Inspection Manual for Control of Volatile Organic Emissions from Gasoline Marketing Operations: Appendix D", 1980, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-80-012.

u) "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals: Appendix A", December 1977, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-77-026.

v) California Air Resources Board, Compliance Division. Compliance Assistance Program: Gasoline Marketing and Distribution: Gasoline Facilities Phase I & II (October 1988, rev. November 1993) (CARB Manual).

w) "Guidelines for Determining Capture Efficiency", January 1995, Office of Air Quality Planning and Standards, United States Environmental Protection Agency, Research Triangle Park NC.

x) Memorandum "Revised Capture Efficiency Guidance for Control of Volatile Organic Compound Emissions", February1995, John S. Seitz, Director, Office of Air Quality Planning and Standards, United States Environmental Protection Agency.

y) "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations", September 2008, United States Environmental Protection Agency, Washington, D.C., EPA-453/R-08-002.

z) 40 CFR 63 subpart PPPP, appendix A (2008).

aa) 46 CFR subchapter Q (2007).

bb) 46 CFR subchapter T (2008).

(Source: Amended at 38 Ill. Reg. 1061, effective December 23, 2013)

SUBPART B: ORGANIC EMISSIONS FROM STORAGE AND LOADING OPERATIONS

Section 219.119 Applicability for VOL

The limitations of Section 219.120 of this Subpart shall apply to all storage containers of volatile organic liquid (VOL) with a maximum true vapor pressure of 0.5 psia or greater in any stationary tank, reservoir, or other container of 151 cubic meters (40,000 gal) capacity or greater, except to vessels as provided below:

a) Vessels with a capacity greater than or equal to 40,000 gallons storing a liquid with a maximum true pressure of less than 0.5 psia;

b) Vessels of coke oven by-product plants;

c) Pressure vessels designed to operate in excess of 29.4 psia and without emissions to the atmosphere;

d) Vessels permanently attached to mobile vehicles such as trucks, rail cars, barges, or ships;

e) Vessels storing petroleum liquids; or

f) Vessels used to store beverage alcohol.

g) Vessels with storage capacity less than 40,000 gallons must comply with Section 218.129(f).

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

Section 219.120 Control Requirements for Storage Containers of VOL

a) Every owner or operator storing VOL in a vessel of 40,000 gallons or greater with a maximum true vapor pressure equal to 0.75 psia but less than 11.1 psia shall reduce VOM emissions from storage tanks, reservoirs, or other containers as follows:

1) Each fixed roof tank shall be equipped with an internal floating roof that meets the following specifications or that is equipped with a vapor control system that meets the specifications contained in subsection (a)(4) below:

A) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied and subsequently refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

B) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

i) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank;

ii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous; or

iii) A mechanical shoe seal, which is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

C) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

D) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

E) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

F) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

G) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

H) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

2) During the next scheduled tank cleaning or before March 15, 2004, whichever comes first, each internal floating roof tank shall meet the specifications set forth in subsections (a)(1)(A) through (H) above.

3) Each external floating roof tank shall meet the following specifications:

A) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

i) Except as provided in Section 219.127(b)(4) of this Subpart, the primary seal shall completely cover the annular space between the edge of the floating roof and tank wall and shall be either a liquid mounted seal or a shoe seal.

ii) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in Section 219.127(b)(4) of this Subpart.

iii) The tank shall be equipped with the closure device after the next scheduled tank cleaning, but no later than March 15, 2004.

B) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automotive bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

C) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

4) A closed vent system and control device respectively shall meet the following specifications:

A) The closed vent system shall be designed to collect all VOM vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined by the methods specified in 40 CFR 60.485(c), incorporated by reference at Section 219.112(d) of this Part.

B) The control device shall be designed and operated to reduce inlet VOM emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements of 40 CFR 60.18, incorporated by reference at Section 219.112(d) of this Part.

5) An alternative emission control plan equivalent to the requirements of subsection (a)(1), (a)(2), (a)(3), or (a)(4) above that has been approved by the Agency and the USEPA in a federally enforceable permit or as a SIP revision.

b) The owner or operator of each storage vessel with a design capacity equal to or greater than 40,000 gallons which contains VOL that, as stored, has a maximum true vapor pressure greater than or equal to 11.1 psia shall equip each storage vessel with a closed vent system and control device as specified in subsection (a)(4) above.

c) Notwithstanding subsection (b) of this Section, where an owner or operator can demonstrate that the control device installed on a storage vessel on or before December 31, 1992, was designed to reduce inlet VOM emission by greater than or equal to 90 percent but less than 95 percent, the control device shall be operated to reduce inlet VOM emission by 90 percent or greater.

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

Section 219.121 Storage Containers of VPL

No person shall cause or allow the storage of any VOL with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3 K (70 F) or any gaseous organic material in any stationary tank, reservoir or other container of more than 151 cubic meters (40,000 gal) capacity unless such tank, reservoir or other container:

a) Is a pressure tank capable of withstanding the vapor pressure of such liquid or the pressure of the gas, so as to prevent vapor or gas loss to the atmosphere at all times; or,

b) Is designed and equipped with one of the following vapor loss control devices:

1) A floating roof which rests on the surface of the VOL and is equipped with a closure seal or seals between the roof edge and the tank wall. Such floating roof shall not be permitted if the VOL has a vapor pressure of 86.19 kPa (12.5 psia) or greater at 294.3 K (70 F). No person shall cause or allow the emission of air contaminants into the atmosphere from any gauging or sampling devices attached to such tanks, except during sampling or maintenance operations.

2) A vapor recovery system consisting of:

A) A vapor gathering system capable of collecting 85% or more of the uncontrolled VOM that would be otherwise emitted to the atmosphere; and

B) A vapor disposal system capable of processing such VOM so as to prevent its emission to the atmosphere. No person shall cause or allow the emission of a air contaminants into the atmosphere from any gauging or sampling devices attached to such tank, reservoir or other container except during sampling.

3) Other equipment or means of equal efficiency approved by the Agency according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with Section 219.108 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.122 Loading Operations

a) No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading area having through-put of greater than 151 cubic meters per day (40,000 gal/day) into any railroad tank car, tank truck or trailer unless such loading area is equipped with submerged loading pipes or a device that is equally effective in controlling emissions and is approved by the Agency according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with Section 219.108 of this Part.

b) No person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 1 (250 gal), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Agency according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with Section 219.108 of this Part, or unless such tank is a pressure tank as described in Section 219.121(a) of this Part or is fitted with a recovery system as described in Section 219.121(b)(2) of this Part.

c) Exception: If no odor nuisance exists the limitations of this Section shall only apply to the loading of VOL with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3° K (70 F°).

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.123 Petroleum Liquid Storage Tanks

a) The requirements of subsection (b) of this Section shall not apply to any stationary storage tank:

1) Equipped before January 1, 1979 with one of the vapor loss control devices specified in Section 219.121(b) of this Part, except Section 219.121(b)(1) of this Part;

2) With a capacity of less than 151.42 cubic meters (40,000 gal);

3) With a capacity of less than 1,600 cubic meters (422,400 gal) and used to store produced crude oil and condensate prior to custody transfer;

4) With a capacity of less than 1,430 cubic meters (378,000 gal) and used to store produced oil or condensate in crude oil gathering;

5) Subject to new source performance standards for storage vessels of petroleum liquid, 40 CFR 60, as regulations promulgated by the U.S. Environmental Protection Agency under Section 111 of the Clean Air Act (42 USC 7411), as amended. THE PROVISIONS OF SECTION 111 OF THE CLEAN AIR ACT ... ARE APPLICABLE IN THIS STATE AND

ARE ENFORCEABLE UNDER THE ENVIRONMENTAL PROTECTION ACT (Ill. Rev. Stat. 1991, ch. 111½, par. 1009.1(b)) [415 ILCS 5/9.1(b)];

6) In which volatile petroleum liquid is not stored; or

7) Which is a pressure tank as described in Section 219.121(a) of this Part.

b) Subject to subsection (a) of this Section no owner or operator of a stationary storage tank shall cause or allow the storage of any VOL in the tank unless:

1) The tank is equipped with one of the vapor loss control devices specified in Section 219.121(b) of this Part;

2) There are no visible holes, tears or other defects in the seal or any seal fabric or material of any floating roof;

3) All openings of any floating roof deck, except stub drains, are equipped with covers, lids or seals such that:

A) The cover, lid or seal is in the closed position at all times except when petroleum liquid is transferred to or from the tank;

B) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and

C) Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting;

4) Routine inspections of floating roof seals are conducted through roof hatches once every six months;

5) A complete inspection of the cover and seal of any floating roof tank is made whenever the tank is emptied for reasons other than the transfer of petroleum liquid during the normal operation of the tank, or whenever repairs are made as a result of any semi-annual inspection or incidence of roof damage or defect; and

6) A record of the results of each inspection conducted under subsection (b)(4) or (b)(5) of this Section is maintained.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.124 External Floating Roofs

a) In addition to meeting the requirements of Section 219.123(b) of this Part, no owner or operator of a stationary storage tank equipped with an external floating roof shall cause or allow the storage of any volatile petroleum liquid in the tank unless:

1) The tank has been fitted:

   A) With a continuous secondary seal extending from the floating roof to the tank wall (rim mounted secondary seal), or

   B) With any other equipment or means of equal efficiency approved by the Agency according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with Section 219.108 of this Part.

2) Each seal closure device meets the following requirements:

   A) The seal is intact and uniformly in place around the circumference of the floating roof between the floating roof and tank wall; and

   B) The accumulated area of gaps exceeding 0.32 centimeter (1/8 inch) in width between the secondary seal and the tank wall shall not exceed 21.2 square centimeters per meter of tank diameter (1.0 square inch per foot of tank diameter). Compliance with this requirement shall be determined by:

      i) Physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (0.125 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall; and

      ii) Summing the area of the individual gaps.

3) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers across at least 90 percent of the area of the opening;

4) Openings are equipped with projections into the tank which remain below the liquid surface at all times;

5) Inspections are conducted prior to May 1 of each year to insure compliance with subsection (a) of this Section;

6) The secondary seal gap is measured prior to May 1 of each year and within 30 days of a written request to demonstrate compliance with subsection (2)(B) of this Section;

7) Records of the types of volatile petroleum liquid stored, the maximum true vapor pressure of the liquid as stored, the results of the inspections and the results of the secondary seal gap measurements are maintained and

available to the Agency, upon verbal or written request, at any reasonable time for a minimum of two years after the date on which the record was made.

b) Subsection (a) above does not apply to any stationary storage tank equipped with an external floating roof:

1) Exempted under Section 219.123(a)(2) through 219.123(a)(6) of this Part;

2) Of welded construction equipped with a metallic type shoe seal having a secondary seal from the top of the shoe seal to the tank wall (shoe-mounted secondary seal);

3) Of welded construction equipped with a metallic type shoe seal, a liquid-mounted foam seal, a liquid-mounted liquid-filled-type seal, or other closure device of equivalent control efficiency approved by the Agency in which a petroleum liquid with a true vapor pressure less than 27.6 kPa (4.0 psia) at 294.3° K (70°F) is stored; or

4) Used to store crude oil with a pour point of 50°F or higher as determined by ASTM Standard D97-66 incorporated by reference in Section 219.112 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.125 Compliance Dates

Every owner or operator of a VOL or VPL storage vessel subject to the requirements of this Subpart shall comply with the requirements of this Subpart in accordance with the compliance schedule specified in the applicable subsection below:

a) Every owner or operator of a VPL storage vessel of the type included in Sections 219.121, 219.123 and 219.124 of this Subpart shall have complied with the requirements of Sections 219.121, 219.123 and 219.124 by the date set forth in Section 219.106(a) or (b) of this Part.

b) Every owner or operator of a VOL storage vessel of the type identified in Section 219.119 of this Subpart shall comply with the requirements of Section 219.120 of this Subpart as follows:

1) For fixed roof tanks (Section 219.120(a)(1) of this Subpart), by March 15, 1996.

2) For internal floating roof tanks (Section 219.120(a)(2) of this Subpart), either during the next scheduled tank cleaning or by March 15, 2004, whichever comes first;

3) For external floating roof tanks (Section 219.120(a)(3) of this Subpart),

either during the next scheduled tank cleaning or by March 15, 2004, whichever comes first; and

4) For closed vent system and control device equipped tanks (Section 219.120(a)(4) of this Subpart), by March 15, 1996.

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

Section 219.127 Testing VOL Operations

The owner or operator of each storage vessel specified in Section 219.119 of this Subpart shall comply with the requirements of subsection (a), (b), or (c) below. The applicable subsection for a particular storage vessel depends on the control equipment installed to meet the requirements of this Subpart.

a) After installing the control equipment necessary for the source to comply with the requirements of Section 219.120(a)(1) or (2) of this Subpart (permanently affixed roof and internal floating roof), each owner or operator shall:

1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

2) For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or if there is liquid accumulated on the roof, or if the seal is detached, or if there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this subsection cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, the owner or operator may request a 30-day extension from the Agency in the inspection report required in Section 219.129(a)(3) of this Subpart. Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the owner or operator will take that will assure that the control equipment will be repaired or the vessel will be emptied within 30 days.

3) For vessels equipped with both primary and secondary seals:

A) Visually inspect the vessel as specified in subsection (a)(4) below at least every 5 years; or

B) Visually inspect the vessel as specified in subsection (a)(2) above.

4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal, or if the seal fabric or the secondary seal has holes, tears, or other openings in the seal, or if the seal fabric or the gaskets no longer close off the liquid surfaces from the atmosphere, or if the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this subsection exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels subject to the annual visual inspection as specified in subsections (a)(2) and (a)(3)(B) above and at intervals no greater than 5 years in the case of vessels specified in subsection (a)(3)(A) above.

5) Notify the Agency in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by subsections (a)(1) and (a)(4) above to afford the Agency the opportunity to have an observer present. If the inspection required by subsection (a)(4) above is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Agency at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Agency at least 7 days prior to the refilling.

b) The owner or operator of external floating roof tanks shall:

1) Determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel.

A) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days after the initial fill with VOL and at least once every 5 years thereafter.

B) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days after the initial fill with VOL and at least once per year thereafter.

C) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of subsections (b)(1)(A) and (b)(1)(B) above.

2) Determine gap widths and areas in the primary and secondary seals individually according to the following procedures:

A) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports;

B) Measure seal gaps around the entire circumference of the tank in each place where a 1/8 inch in diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location; and

C) Determine the total surface area of each gap described in subsection (b)(2)(B) above by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each by the nominal diameter of the tank and compare each ratio to the respective standards in subsection (b)(4) below.

4) Make necessary repairs or empty the storage vessel within 45 days after identification in any inspection for seals not meeting the requirements listed in subsections (b)(4)(A) and (B) below:

A) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 10 in.(2) per foot of tank diameter, and the width of any portion of any gap shall not exceed 1.5 in. There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

B) The secondary seal is to meet the following requirements:

i) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in subsection (b)(2)(C) above.

ii) The accumulated area of gaps between the tank wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed 1.0 in.(2) per foot of tank diameter, and the width of any portion of any gap shall not exceed 0.5 in. There shall be no gaps between the tank wall and the secondary seal when used in combination with vapor mounted primary seal.

iii) There are to be no holes, tears, or other openings in the seal or seal fabric.

C) If a failure that is detected during inspections required in Section 219.127(b)(1) of this Subpart cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, the owner or operator may request a 30-day extension from the Agency in the inspection report required in Section 219.129(b)(4) of this Subpart. Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

5) Notify the Agency 30 days in advance of any gap measurements required by subsection (b)(1) above to afford the Agency the opportunity to have an observer present.

6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

A) If the external floating roof has defects, if the primary seal has holes, tears, or other openings in the seal or the seal fabric, or if the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this subsection exist before filling or refilling the storage vessel with VOL.

B) For all the inspections required by subsection (b)(6) above, the owner or operator shall notify the Agency in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Agency the opportunity to inspect the storage vessel prior to refilling. If the inspection required by subsection (b)(6) above is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Agency at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be sent by express mail so that it is received by the Agency at least 7 days prior to the refilling.

c) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements of Section 219.120(a)(4) of this Subpart shall meet the requirements specified in the general control device requirements of 40 CFR 60.18(e) and (f), incorporated by reference at Section 219.112(d) of this Part.

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

Section 219.128 Monitoring VOL Operations

a) Except as provided in subsection (d), the owner or operator of each storage vessel with a design capacity greater than or equal to 40,000 gallons storing a liquid with a maximum true vapor pressure that is normally less than 0.75 psia shall notify the Agency within 30 days when the maximum true vapor pressure of the liquid exceeds 0.75 psia.

b) Available data on the storage temperature may be used to determine the maximum true vapor pressure.

  1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

  2) For other liquids, the vapor pressure:

    A) Determined by ASTM Method D2879-83, incorporated by reference at Section 219.112(a) of this Part;

    B) Measured by an appropriate method approved by the Agency and USEPA; or

    C) Calculated by an appropriate method approved by the Agency and USEPA.

c) The owner or operator of each vessel storing a mixture of indeterminate or variable composition shall be subject to the following:

  1) Prior to the initial filling of the vessel, the maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in subsection (b).

  2) For vessels in which the vapor pressure of the anticipated liquid composition is 0.5 psia or greater but less than 0.75 psia, an initial physical test of the vapor pressure is required; a physical test at least once every 6 months thereafter is required as determined by the following methods:

    A) ASTM Method D2879-83, incorporated by reference at Section

219.112(a) of this Part;

B) ASTM Method D323-08, incorporated by reference at Section 219.112(a) of this Part; or

C) As measured by an appropriate method approved by the Agency.

d) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specifications of Section 219.120 of this Subpart is exempt from the requirements of subsections (a) and (b).

(Source: Amended at 37 Ill. Reg. 1722, effective January 28, 2013)

Section 219.129 Recordkeeping and Reporting for VOL Operations

The owner or operator of each storage vessel specified in Section 219.120(a) of this Subpart shall maintain records and furnish reports as required by subsection (a), (b), or (c) below as appropriate for the control equipment installed to meet the requirements of Section 219.120. The owner or operator shall keep copies of all reports and records required by this Section, except for the records required by subsection (c)(1) below, for at least 3 years. The records required by subsection (c)(1) below shall be kept for the life of the control equipment.

a) After installing control equipment in accordance with Section 219.120(a)(1) or (2) of this Subpart (fixed roof and internal floating roof), the owner or operator shall:

1) Furnish the Agency with a report that describes the control equipment and certifies that the control equipment meets the specifications of Sections 219.120(a)(1) and 219.127(a)(1) of this Subpart;

2) Keep a record of each inspection performed as required by Section 219.127(a)(1), (a)(2), (a)(3), and (a)(4) of this Subpart. Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings);

3) If any of the conditions described in Section 219.127(a)(2) of this Subpart are detected during the annual visual inspection required by Section 219.127(a)(2), report to the Agency within 30 days after the inspection the identity of the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made; and

4) After each inspection required by Section 219.127(a)(3) of this Subpart where holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in Section 219.127(a)(3)(B) of this Subpart are discovered, report to the Agency within 30 days after the inspection the identity of the storage vessel and

the reason it did not meet the specifications of Section 219.120(a)(1) or (2) or Section 219.127(a) of this Subpart, and list each repair made.

b) After installing control equipment in accordance with Section 219.120(a)(3) of this Subpart (external floating roof), the owner or operator shall:

1) Furnish the Agency with a report that describes the control equipment and certify that the control equipment meets the specifications of Sections 219.120(a)(3) and 219.127(b)(2), (b)(3), and (b)(4) of this Subpart;

2) Within 60 days after performing the seal gap measurements required by Section 219.127(b)(1) of this Subpart, furnish the Agency with a report that contains:

A) The date of measurement;

B) The raw data obtained in the measurement; and

C) The calculations of this Subpart described in Section 219.127(b)(2) and (b)(3) of this Subpart;

3) Maintain records of each gap measurement performed as required by Section 219.127(b) of this Subpart. Such records shall identify the storage vessel in which the measurement was performed and shall contain:

A) The date of measurement;

B) The raw data obtained in the measurement; and

C) The calculations described in Section 219.127(b)(2) and (b)(3) of this Subpart;

4) After each seal gap measurement that detects gaps exceeding the limitations specified by Section 219.127(b)(4) of this Subpart, submit a report to the Agency within 30 days after the inspection identifying the vessel and containing the information specified in subsection (b)(2) above and the date the vessel was emptied or the repairs were made and the date of repair.

c) After installing control equipment in accordance with Section 219.127(a)(4) or (b)(1) of this Subpart (closed vent system and control device other than a flare), the owner or operator shall maintain the following records:

1) A copy of the operating plan; and

2) The measured values of the parameters monitored in accordance with Section 219.127(c)(2) of this Subpart.

d) After installing a closed vent system and flare to comply with Section 219.127 of this Subpart, the owner or operator shall:

1) Provide the Agency with a report containing the measurements required by 40 CFR 60.18(f)(1), (2), (3), (4), (5), and (6), incorporated by reference at Section 219.112(d) of this Part, within 6 months after the initial start-up date;

2) Maintain records of all periods of operation during which the flare pilot flame is absent; and

3) Report semiannually all periods recorded under 40 CFR 60.115b(d)(2), incorporated by reference at Section 219.112(d) of this Part, in which the pilot flame was absent.

e) The owner or operator shall maintain all records required by this Section, except for the records required by subsection (f) below, for at least 3 years. The records required by subsection (f) below shall be kept for the life of the source.

f) The owner or operator of each storage vessel specified in Section 219.119 of this Subpart shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provision of this Part other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.

g) Except as provided in Section 219.128(c) and (d) of this Subpart, the owner or operator of each storage vessel subject to the requirements in Section 219.120 with a design capacity greater than or equal to 40,000 gallons storing a liquid with a maximum true vapor pressure greater than or equal to 0.5 psia but less than 0.75 psia shall maintain a record of the VOL storage, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period.

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

SUBPART C: ORGANIC EMISSIONS FROM MISCELLANEOUS EQUIPMENT

Section 219.141 Separation Operations

a) No person shall use any single or multiple compartment effluent water separator which receives effluent water containing 757 1/day (200 gal/day) or more of organic material from any equipment processing, refining, treating, storing or handling organic material unless such effluent water separator is equipped with air pollution control equipment capable of reducing by 85 percent or more the uncontrolled organic material emitted to the atmosphere. Exception: If no odor nuisance exists the limitations of this subsection shall not apply if the vapor pressure of the organic material is below 17.24 kPa (2.5 psia) at 294.3°K (70°F).

b) Subsection (a) of this Section shall not apply to water and crude oil separation in the production of Illinois crude oil, if the vapor pressure of such crude oil is less than 34.5 kPa (5 psia).

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.142 Pumps and Compressors

No person shall cause or allow the discharge of more than 32.8 ml (2 cu in) of VOL with vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3° K (70°F) into the atmosphere from any pump or compressor in any 15 minute period at standard conditions.

Section 219.143 Vapor Blowdown

No person shall cause or allow the emission of organic material into the atmosphere from any vapor blowdown system or any safety relief valve, except such safety relief valves not capable of causing an excessive release, unless such emission is controlled:

a) To 10 ppm equivalent methane (molecular weight 16.0) or less; or,

b) By combustion in a smokeless flare; or,

c) By other air pollution control equipment approved by the Agency according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with Section 219.108 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.144 Safety Relief Valves

Section 219.143 of this Part shall not apply to any set of unregulated safety relief valves capable of causing excessive releases, provided the owner or operator thereof, by October 1, 1972, supplied the Agency with the following:

a) A historical record of each such set (or, if such records were unavailable, of similar sets which, by virtue of operation under similar circumstances, may reasonably have been presumed to have the same or greater frequency of excessive releases) for a three-year period immediately preceding October 1, 1972, indicating:

  1) Dates on which excessive releases occurred from each such set; and

  2) Duration in minutes of each such excessive release; and

  3) Quantities (in pounds) of mercaptans and/or hydrogen sulfide emitted into the atmosphere during each such excessive release.

b) Proof, using such three-year historical records, that no excessive release is likely to occur from any such set either alone or in combination with such excessive releases from other sets owned or operated by the same person and located within a ten-mile radius from the center point of any such set, more frequently than 3 times in any 12 month period;

c) Accurate maintenance records pursuant to the requirements of subsection (a) of this Section; and,

d) Proof, at three-year intervals, using such three-year historical records, that such set conforms to the requirements of subsection (c) of this Section.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART E: SOLVENT CLEANING

Section 219.181 Solvent Cleaning Degreasing Operations

The requirements of Sections 219.182, 219.183, 219.184, and 219.186 of this Subpart shall apply to all cold cleaning, open top vapor degreasing, and conveyorized degreasing operations which use volatile organic materials.

(Source: Amended at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.182 Cold Cleaning

a) Operating Procedures: No person shall operate a cold cleaning degreaser unless:

1) Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

2) The cover of the degreaser is closed when parts are not being handled; and

3) Parts are drained until dripping ceases.

b) Equipment Requirements: No person shall operate a cold cleaning degreaser unless:

1) The degreaser is equipped with a cover which is closed whenever parts are not being handled in the cleaner. The cover shall be designed to be easily operated with one hand or with the mechanical assistance of springs, counter-weights or a powered system if:

A) The solvent vapor pressure is greater than 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F));

B) The solvent is agitated; or

C) The solvent is heated above ambient room temperature.

2) The degreaser is equipped with a device for draining cleaned parts. The drainage device shall be constructed so that parts are enclosed under the cover while draining unless:

A) The solvent vapor pressure is less than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F); or

B) An internal drainage device cannot be fitted into the cleaning system, in which case the drainage device may be external.

3) The degreaser is equipped with one of the following control devices if the vapor pressure of the solvent is greater than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F) or if the solvent is heated above 50oC (120oF) or its boiling point:

A) A freeboard height of 7/10 of the inside width of the tank or 91 cm (36 in), whichever is less; or

B) Any other equipment or system of equivalent emission control as approved by the Agency and further processed consistent with Section 219.108 of this Part. Such a system may include a water cover, refrigerated chiller or carbon adsorber.

4) A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser; and

5) If a solvent spray is used, the degreaser is equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.

c) Material Requirements:

1) On and after March 15, 1999, no person shall:

A) Cause or allow the sale of solvent with a vapor pressure which exceeds 2.0 mmHg (0.038 psi) measured at 20°C (68°F) in units greater than five (5) gallons, for use in cold cleaning degreasing operations located in the area covered by Section 218.103 of this Part.

B) Operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 2.0 mmHg (0.038 psi) measured at 20°C (68°F).

2) On and after March 15, 2001, no person shall:

A) Cause or allow the sale of solvent with a vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F) in units greater than five (5) gallons, for use in cold cleaning degreasing operations located in the area covered by Section 218.103 of this Part.

B) Operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F).

d) Recordkeeping Requirements: On and after March 15, 1999:

1) All persons subject to the requirements of subsections (c)(1)(A) and (c)(2)(A) of this Section must maintain records which include for each sale:

A) The name and address of the solvent purchaser;

B) The date of sale;

C) The type of solvent;

D) The unit volume of solvent;

E) The total volume of solvent; and

F) The vapor pressure of the solvent measured in mmHg at 20°C (68°F).

2) All persons subject to the requirements of subsections (c)(1)(B) and (c)(2)(B) of this Section must maintain records which include for each purchase:

A) The name and address of the solvent supplier;

B) The date of purchase;

C) The type of solvent; and

D) The vapor pressure of the solvent measured in mmHg at 20°C (68°F).

e) All records required by subsection (d) of this Section shall be retained for three years and shall be made available to the Agencv upon request.

f) The cleaning of electronic components as defined in 35 Ill. Adm. Code Section 211.1885 is exempt from the requirements of subsection(c) of this Section.

g) Any cold cleaning taking place in a Detrex cold batch degreaser Model #2D-CC-SPL Size 24-4-10, or substantial equivalent, including automated loading of parts, totally enclosed operation (excluding loading or unloading) and permitted by the

Agency, is exempt from the requirements of subsection (c) of this Section.

(Source: Amended at 21 Ill. Reg. 7721, effective June 9, 1997)

Section 219.183 Open Top Vapor Degreasing

a) Operating Requirements: No person shall operate an open top vapor degreaser unless:

1) The cover of the degreaser is closed when workloads are not being processed through the degreaser;

2) Solvent carryout emissions are minimized by:

A) Racking parts to allow complete drainage;

B) Moving parts in and out of the degreaser at less than 3.3 m/min (11 ft/min);

C) Holding the parts in the vapor zone until condensation ceases;

D) Tipping out any pools of solvent on the cleaned parts before removal from the vapor zone; and

E) Allowing parts to dry within the degreaser until visually dry.

3) Porous or absorbent materials, such as cloth, leather, wood or rope are not degreased;

4) Less than half of the degreaser's open top area is occupied with a workload;

5) The degreaser is not loaded to the point where the vapor level would drop more than 10 cm (4 in) when the workload is removed from the vapor zone;

6) Spraying is done below the vapor level only;

7) Solvent leaks are repaired immediately;

8) Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

9) Water is not visually detectable in solvent exiting from the water separator; and

10) Exhaust ventilation exceeding 20 cubic meters per minute per square

meter (65 cubic feet per minute per square foot) of degreaser open area is not used, unless necessary to meet the requirements of the Occupational Safety and Health Act (29 U.S.C. Section 651 et seq.).

b) Equipment Requirements: No person shall operate an open top vapor degreaser unless:

1) The degreaser is equipped with a cover designed to open and close easily without disturbing the vapor zone;

2) The degreaser is equipped with the following switches:

A) One which shuts off the sump heat source if the amount of condenser coolant is not sufficient to maintain the designed vapor level; and

B) One which shuts off the spray pump if the vapor level drops more than 10 cm (4 in) below the bottom condenser coil; and

C) One which shuts off the sump heat when the vapor level exceeds the design level.

3) A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser;

4) The degreaser is equipped with one of the following devices:

A) A freeboard height of 3/4 of the inside width of the degreaser tank or 91 cm (36 in), whichever is less; and if the degreaser opening is greater than 1 square meter (10.8 ft^2), a powered or mechanically assisted cover; or

B) Any other equipment or system of equivalent emission control as approved by the Agency and further processed consistent with Section 219.108 of this Part. Such equipment or system may include a refrigerated chiller, an enclosed design or a carbon adsorption system.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.184 Conveyorized Degreasing

a) Operating Requirements: No person shall operate a conveyorized degreaser unless:

1) Exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of area of loading and unloading opening is not used, unless necessary to meet the requirements

of the Occupational Safety and Health Act (29 U.S.C. Section 651 et seq.);

2) Solvent carryout emissions are minimized by:

A) Racking parts for best drainage; and

B) Maintaining the vertical conveyor speed at less than 3.3 m/min (11 ft/min);

3) Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

4) Solvent leaks are repaired immediately;

5) Water is not visually detectable in solvent exiting from the water separator; and

6) Downtime covers are placed over entrances and exits of conveyorized degreasers immediately after the conveyors and exhausts are shut down and not removed until just before start-up.

b) Equipment Requirements: No person shall operate a conveyorized degreaser unless:

1) The degreaser is equipped with a drying tunnel, rotating (tumbling) basket or other equipment sufficient to prevent cleaned parts from carrying out solvent liquid or vapor;

2) The degreaser is equipped with the following switches:

A) One which shuts off the sump heat source if the amount of condenser coolant is not sufficient to maintain the designed vapor level;

B) One which shuts off the spray pump or the conveyor if the vapor level drops more than 10 cm (4 in) below the bottom condenser coil; and

C) One which shuts off the sump heat when the vapor level exceeds the design level;

3) The degreaser is equipped with openings for entrances and exits that silhouette workloads so that the average clearance between the parts and the edge of the degreaser opening is less than 10 cm (4 in) or less than 10 percent of the width of the opening;

4) The degreaser is equipped with downtime covers for closing off entrances and exits when the degreaser is shut down; and

5) The degreaser is equipped with one of the following control devices, if the air/vapor interface is larger than 2.0 square meters (21.6 ft^2):

A) A carbon adsorption system with ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air/vapor area when downtime covers are open, and exhausting less than 25 ppm of solvent by volume averaged over a complete adsorption cycle; or

B) Any other equipment or system of equivalent emission control as approved by the Agency, and further processed consistent with Section 219.108 of this Part. Such equipment or system may include a refrigerated chiller.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.186 Test Methods

The following test methods shall be used to demonstrate compliance with this Subpart:

a) Vapor pressures shall be determined by using the procedure specified in Section 219.110 of this Part.

b) Exhaust ventilation rates shall be determined by using the procedures specified in Section 219.105(f)(3) of this Part.

c) The performance of control devices shall be determined by using the procedures specified in Section 219.105(f) of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.187 Other Industrial Solvent Cleaning Operations

a) Applicability. On and after January 1, 2012:

1) Except as provided in subsection (a)(2) of this Section, the requirements of this Section shall apply to all cleaning operations that use organic materials at sources that emit a total of 226.8 kg per calendar month (500 lbs per calendar month) or more of VOM, in the absence of air pollution control equipment, from cleaning operations at the source other than cleaning operations identified in subsection (a)(2) of this Section. For purposes of this Section, "cleaning operation" means the process of cleaning products, product components, tools, equipment, or general work areas during production, repair, maintenance or servicing, including but not limited to spray gun cleaning, spray booth cleaning, large and small

manufactured components cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning, and tank cleaning, at sources with emission units;

2) Notwithstanding subsection (a)(1) of this Section:

A) The following cleaning operations shall be exempt from the requirements of subsections (b), (c), (d), (e), (f), and (g) of this Section:

i) Cleaning operations subject to the limitations in Sections 219.182, 219.183, or 219.184;

ii) Janitorial cleaning;

iii) Stripping of cured coatings, inks, or adhesives;

iv) Cleaning operations in printing pre-press areas, including the cleaning of film processors, color scanners, plate processors, film cleaning, and plate cleaning;

B) Cleaning operations for emission units within the following categories shall be exempt from the requirements of subsections (b), (c), (d), (e), (f), and (g) of this Section:

i) Flexible package printing;

ii) Lithographic printing;

iii) Letterpress printing;

iv) Flat wood paneling coating;

v) Large appliance coating;

vi) Metal furniture coating;

vii) Paper, film, and foil coating;

viii) Wood furniture coating;

ix) Plastic parts coating;

x) Miscellaneous metal parts coating;

xi) Fiberglass boat manufacturing;

xii) Miscellaneous industrial adhesives; and

xiii) Auto and light-duty truck assembly coating;

C) The following cleaning operations shall be exempt from the requirements of subsections (b), (c), (f), and (g) of this Section:

i) Cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics;

ii) Cleaning conducted as part of performance laboratory tests on coatings, adhesives, or inks; research and development operations; or laboratory tests in quality assurance laboratories;

iii) Cleaning of paper-based gaskets and clutch assemblies where rubber is bonded to metal by means of an adhesive;

iv) Cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics;

v) Cleaning of medical device and pharmaceutical manufacturing operations if the facility uses no more than 5.7 liters (1.5 gallons) per day of solvents for such cleaning;

vi) Cleaning of adhesive application equipment used for thin metal laminating;

vii) Cleaning of electronic or electrical cables;

viii) Touch-up cleaning performed on printed circuit boards where surface mounted devices have already been attached;

ix) Cleaning of coating and adhesive application processes utilized to manufacture transdermal drug delivery products using no more than three gallons per day of ethyl acetate;

x) Cleaning of application equipment used to apply coatings on satellites and radiation effect coatings;

xi) Cleaning of application equipment used to apply solvent-borne fluoropolymer coatings;

xii) Cleaning of ultraviolet or electron beam adhesive application;

xiii) Cleaning of sterilization indicating ink application equipment if the facility uses no more than 5.7 liters (1.5 gallons) per day of solvents for such cleaning;

xiv) Cleaning of metering rollers, dampening rollers, and printing plates;

xv) Cleaning of numismatic dies; and

xvi) Cleaning operations associated with digital printing;

xvii) Cleaning with aerosol products if the facility uses no more than 4.7 liters (1.25 gallons) per day of such products;

xviii) Cleaning of plastic-based or vinyl-based substrates for use in the screen printing process when using UV curable ink and coating systems;

xix) Cleaning conducted as part of performance tests on coatings, adhesives, or inks that are in research and development and that are not yet commercially used for the applications for which they are being tested. This exemption is limited to the use of up to a total of 90.9 liters (24 gallons) per calendar month and 416.3 liters (110 gallons) of cleaning solvent per calendar year for such cleaning.

b) Material and Control Requirements. No owner or operator of a source subject to this Section, other than manufacturers of coatings, inks, adhesives, or resins, shall perform any cleaning operation subject to this Section unless the owner or operator meets the requirements in subsection (b)(1), (b)(2), or (b)(3). No owner or operator of a source that manufactures coatings, inks, adhesives, or resins shall perform any cleaning operation subject to this Section unless the owner or operator meets the requirements in at least one of the following subsections: (b)(1), (b)(2), (b)(3), (b)(4), or (b)(5).

1) The VOM content of the as-used cleaning solutions does not exceed the following emissions limitations:

A) Product cleaning during manufacturing process or surface preparation for coating, adhesive, or ink application:

		kg/l	lb/gal
i)	Electrical apparatus components and electronic components	0.10	0.83
ii)	Medical device and pharmaceutical manufacturing	0.80	6.7

B) Repair and maintenance cleaning:

		kg/l	lb/gal
i)	Electrical apparatus components and electronic	0.10	0.83
ii)	Medical device and pharmaceutical manufacturing: tools, equipment, and machinery	0.80	6.7
iii)	Medical device and pharmaceutical manufacturing: general work surfaces	0.60	5.0

C) Cleaning of ink application equipment:

		kg/l	lb/gal
i)	Rotogravure printing that does not print flexible packaging	0.10	0.83
ii)	Screen printing, including screen reclamation activities	0.50	4.2
iii)	Ultraviolet ink and electron beam ink application equipment, except screen printing	0.65	5.4
iv)	Flexographic printing that does not print flexible packaging	0.10	0.83

		kg/l	lb/gal
D)	Cleaning of equipment used in the manufacture of coatings, inks, adhesives, or resins	0.20	1.67

		kg/l	lb/gal
E)	All other cleaning operations not subject to a specific limitation in subsections (b)(1)(A) through (b)(1)(D) of this Section	0.050	0.42

2) The VOM composite vapor pressure of each as-used cleaning solution used does not exceed 8.0 mmHg measured at 20ºC (68ºF);

3) An afterburner or carbon adsorber is installed and operated that reduces VOM emissions from the subject cleaning operation by at least 85 percent overall, or for sources that manufacture coatings, inks, adhesives, or resins, an afterburner or carbon adsorber is installed and operated that

reduces VOM emissions from the subject cleaning operation by at least 80 percent overall and has a 90 percent efficiency. The owner or operator may use an emissions control system other than an afterburner or carbon adsorber if such device reduces VOM emissions from the subject cleaning operation in accordance with the applicable capture and control requirements of this subsection (b)(3), the owner or operator submits a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for such control device, and such plan is approved by the Agency and USEPA within federally enforceable permit conditions;

4) For sources that manufacture coatings, inks, adhesives, or resins, the owner or operator complies with the following work practices:

A) Equipment being cleaned is maintained leak-free;

B) VOM-containing cleaning materials are drained from the cleaned equipment upon completion of cleaning;

C) VOM-containing cleaning materials, including waste solvent, are not stored or disposed of in such a manner that will cause or allow evaporation into the atmosphere; and

D) VOM-containing cleaning materials are stored in closed containers;

5) Sources that manufacture coatings, inks, adhesives, or resins may utilize solvents that do not comply with subsection (b)(1) or (b)(2) of this Section provided that all of the following requirements are met:

A) No more than 228 l (60 gal) of fresh solvent is used per calendar month. Solvent that is reused or recycled, either onsite or offsite, for further use in equipment cleaning or in the manufacture of coatings, inks, adhesives, or resins, shall not be included in this limit;

B) Solvents, including cleanup solvents, are collected and stored in closed containers; and

C) Records are maintained in accordance with subsection (e)(6).

c) The owner or operator of a subject source shall demonstrate compliance with this Section by using the applicable test methods and procedures specified in subsection (g) of this Section and by complying with the recordkeeping and reporting requirements specified in subsection (e) of this Section.

d) Operating Requirements. The owner or operator of a source subject to the requirements of this Section shall comply with the following for each subject cleaning operation. Such requirements are in addition to work practices set forth in subsections (b)(4) and (b)(5) of this Section, as applicable:

1) Cover open containers and properly cover and store applicators used to apply cleaning solvents;

2) Minimize air circulation around the cleaning operation;

3) Dispose of all used cleaning solutions, cleaning towels, and applicators used to apply cleaning solvents in closed containers;

4) Utilize equipment practices that minimize emissions;

5) When using cleaning solvent for wipe cleaning, sources that manufacture coatings, inks, adhesives, or resins shall:

A) Cover open containers used for the storage of spent or fresh organic compounds used for cleanup or coating, ink, adhesive, or resin removal; and

B) Cover open containers used for the storage or disposal of cloth or paper impregnated with organic compounds that are used for cleanup or coating, ink, adhesive, or resin removal.

e) Recordkeeping and Reporting Requirements

1) The owner or operator of a source exempt from the limitations of this Section because of the criteria in subsection (a)(1) of this Section shall comply with the following:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

i) A declaration that the source is exempt from the requirements of this Section because of the criteria in subsection (a)(1);

ii) Calculations that demonstrate that combined emissions of VOM from cleaning operations at the source, other than cleaning operations identified in subsection (a)(2) of this Section, never equal or exceed 226.8 kg/month (500 lbs/month), in the absence of air pollution control equipment. An emission adjustment factor of 0.50 shall be used in calculating emissions from used shop towels if the VOM composite vapor pressure of each associated cleaning solution is demonstrated to be less than 10 mmHg at 20ºC (68ºF) and the used shop towels are kept in closed containers. For cleaning solutions with VOM composite vapor pressure of equal to or greater than 10 mmHg measured at 20ºC (68ºF) and for shop towels that are not kept in closed containers, no emission adjustment factor shall be used;

B) On and after January 1, 2012, collect and record the following information each month for each cleaning operation, other than cleaning operations identified in subsection (a)(2) of this Section:

i) The name and identification of each VOM-containing cleaning solution as applied in each cleaning operation;

ii) The VOM content of each cleaning solution as applied in each cleaning operation;

iii) The weight of VOM per volume and the volume of each as-used cleaning solution; and

iv) The total monthly VOM emissions from cleaning operations at the source;

C) Notify the Agency of any record that shows that the combined emissions of VOM from cleaning operations at the source, other than cleaning operations identified in subsection (a)(2) of this Section, ever equal or exceed 226.8 kg/month (500 lbs/month), in the absence of air pollution control equipment, within 30 days after the event occurs.

2) All sources subject to the requirements of this Section shall:

A) By January 1, 2012 or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

i) A declaration that all subject cleaning operations are in compliance with the requirements of this Section;

ii) Identification of each subject cleaning operation and each VOM-containing cleaning solution used as of the date of certification in such operation;

iii) If complying with the emissions control system requirement, what type of emissions control system will be used;

iv) Initial documentation that each subject cleaning operation will comply with the applicable limitation, including copies of manufacturer's specifications, test results (if any), formulation data, and calculations;

v) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;

vi) A description of the practices and procedures that the source will follow to ensure compliance with the limitations in subsection (d), and, if applicable, subsection (b)(4); and

vii) A description of each cleaning operation exempt pursuant to subsection (a)(2), if any, and a listing of the emission units on which the exempt cleaning operation is performed;

B) At least 30 calendar days before changing the method of compliance between subsections (b)(1), (b)(2), (b)(4), or (b)(5) and subsection (b)(3) of this Section, notify the Agency in writing of such change. The notification shall include a demonstration of compliance with the newly applicable subsection;

3) All sources complying with this Section pursuant to the requirements of subsection (b)(1) of this Section shall collect and record the following information for each cleaning solution used:

A) For each cleaning solution that is prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) The VOM content of each cleaning solvent in the cleaning solution;

iii) Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);

iv) The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;

v) The VOM content of the as-used cleaning solution, with supporting calculations; and

vi) A calibration log for the automatic equipment, detailing periodic checks;

B) For each batch of cleaning solution that is not prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) Date, time of preparation, and each subsequent modification of the batch;

iii) The VOM content of each cleaning solvent in the cleaning solution;

iv) The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and

v) The VOM content of the as-used cleaning solution, with supporting calculations. For cleaning solutions that are not prepared at the site but are used as purchased, the manufacturer's specifications for VOM content may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part;

4) All sources complying with this Section pursuant to the requirements of subsection (b)(2) of this Section shall collect and record the following information for each cleaning solution used:

A) The name and identification of each cleaning solution;

B) Date, time of preparation, and each subsequent modification of the batch;

C) The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with the applicable methods and procedures specified in Section 219.110 of this Part;

D) The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and

E) The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with the applicable methods and procedures specified in Section 219.110 of this Part;

5) All sources complying with this Section pursuant to the requirements of subsection (b)(3) of this Section shall comply with the following:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, and upon initial start-up of a new emissions control system, include in the certification required by subsection (e)(3) of this Section a declaration that the monitoring equipment required under subsection (f) of this Section has been properly installed and calibrated according to manufacturer's specifications;

B) If testing of an emissions control system is conducted pursuant to subsection (g) of this Section, the owner or operator shall, within 90 days after conducting such testing, submit a copy of all test results to the Agency and shall submit a certification to the Agency that includes the following:

i) A declaration that all tests and calculations necessary to demonstrate compliance with subsection (b)(3) of this Section have been properly performed;

ii) A statement whether the subject cleaning operation is or is not in compliance with subsection (b)(3) of this Section;

iii) The operating parameters of the emissions control system during testing, as monitored in accordance with subsection (f) of this Section;

C) Collect and record daily the following information for each cleaning operation subject to the requirements of subsection (b)(3) of this Section:

i) Emissions control system monitoring data in accordance with subsection (f) of this Section, as applicable;

ii) A log of operating time for the emissions control system, monitoring equipment, and associated cleaning equipment;

iii) A maintenance log for the emissions control system and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages;

D) Maintain records documenting the use of good operating practices consistent with the equipment manufacturer's specifications for the cleaning equipment being used and the emissions control system equipment. At a minimum, these records shall include:

i) Records for periodic inspection of the cleaning equipment and emissions control system equipment with date of inspection, individual performing the inspection, and nature of inspection;

ii) Records for repair of malfunctions and breakdowns with identification and description of incident, date identified, date repaired, nature of repair, and the amount of VOM released into the atmosphere as a result of the incident;

6) All sources complying with this Section pursuant to the requirements of subsection (b)(5) of this Section shall collect and record monthly the following information for each cleaning operation subject to the requirements of subsection (b)(5) of this Section:

A) The name, identification, and volume of each VOM-containing cleaning solution as applied in each cleaning operation;

B) The volume of each fresh cleaning solvent used for cleaning coating, ink, adhesive, or resin manufacturing equipment;

C) The volume of cleaning solvent recovered for either offsite or onsite reuse or recycling for further use in the cleaning of coating, ink, adhesive, or resin manufacturing equipment;

7) The owner or operator of a source with cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(v), (a)(2)(C)(xiii) or (a)(2)(C)(xvii), including sources exempt from the limitations of this Section because of the criteria in subsection (a)(1), shall:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes a declaration that the source has cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(v), (a)(2)(C)(xiii) or (a)(2)(C)(xvii), and a statement identifying each such cleaning operation and the exclusion applicable to each cleaning operation;

B) Collect and record the name, identification, and volume of each cleaning solvent as applied each day in each cleaning operation that falls under one or more of the exclusions set forth in subsection (a)(2)(C)(v), (a)(2)(C)(xiii), or (a)(2)(C)(xvii); and

C) Notify the Agency in writing if the amount of cleaning solvent used in the cleaning of medical device and pharmaceutical manufacturing operations or of sterilization indicating ink application equipment at the source ever exceeds 5.7 liters (1.5 gallons) per day, or if the amount of aerosol cleaning products used at the source ever exceeds 4.7 liters (1.25 gallons) per day, within 30 days after the exceedance occurs;

8) The owner or operator of a source with cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix), including sources exempt from the limitations of this Section because of the criteria in subsection (a)(1), shall:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes a declaration that the source has cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix), and a statement identifying each such cleaning operation and the exclusion applicable to each cleaning operation;

B) Collect and record the name identification, volume, and VOM content of each cleaning solvent as applied each month in each cleaning operation that falls under one or more of the exclusions set forth in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix);

C) For cleaning operations that fall under the exclusion set forth in subsection (a)(2)(C)(xviii), collect and record each month information demonstrating that the exempt cleaning solvent is being used exclusively for the cleaning of plastic-based or vinyl-based substrates for use in the screen printing process when using UV curable ink and coating systems; and

D) For cleaning operations that fall under the exclusion set forth in subsection (a)(2)(C)(xix), collect and record each month information demonstrating that the exempt cleaning solvent is being used exclusively for production line performance testing of coatings that are in research and development and are not yet commercially used for the applications for which they are being tested;

9) All sources subject to the requirements of subsections (b) and (d) of this Section shall notify the Agency of any violation of subsection (b) or (d) by providing a description of the violation and copies of records documenting the violation to the Agency within 30 days following the occurrence of the violation;

10) All records required by this subsection (e) shall be retained by the source for at least three years and shall be made available to the Agency upon request.

f) Monitoring Requirements

1) If an afterburner is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) of this Section shall:

A) Install, calibrate, operate, and maintain temperature monitoring devices with an accuracy of 3°C or 5°F on the emissions control system in accordance with Section 219.105(d)(2) of this Part and in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the emissions control system is operating; and

B) Install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring devices, such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor;

2) If a carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) shall use Agency and USEPA approved continuous monitoring equipment that is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use. The continuous monitoring equipment shall monitor the VOM concentration of each carbon adsorption bed or the exhaust of the bed next in sequence to be desorbed;

3) If an emissions control system other than an afterburner or carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) of this Section shall install, maintain, calibrate, and operate such monitoring equipment as set forth in the owner's or operator's plan approved by the Agency and USEPA pursuant to subsection (b)(3).

g) Testing Requirements

1) Testing to demonstrate compliance with the requirements of this Section shall be conducted by the owner or operator within 90 days after a request by the Agency, or as otherwise specified in this Section. Such testing shall be conducted at the expense of the owner or operator and the owner or operator shall notify the Agency in writing 30 days in advance of conducting the testing to allow the Agency to be present during the testing;

2) Testing to demonstrate compliance with the VOM content limitations in subsection (b)(1) of this Section, and to determine the VOM content of cleaning solvents and cleaning solutions, shall be conducted as follows:

A) The applicable test methods and procedures specified in Section 219.105(a) of this Part shall be used; provided, however, Method 24, incorporated by reference in Section 219.112 of this Part, shall be used to demonstrate compliance; or

B) The manufacturer's specifications for VOM content for cleaning solvents may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part; provided, however, Method 24 shall be used to determine compliance. In the event of any inconsistency between a Method 24 test and the manufacturer's specifications, the Method 24 test shall govern;

3) Testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning solvent concentrates, and as-used cleaning solutions shall be conducted in accordance with the applicable methods and procedures specified in Section 219.110 of this Part;

4) For afterburners and carbon adsorbers, the methods and procedures of Section 219.105(d) through (f) shall be used for testing to demonstrate compliance with the requirements of subsection (b)(3) of this Section, as follows:

  A) To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part;

  B) To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part;

  C) To determine the VOM concentration of the exhaust stream entering and exiting the emissions control system, Method 25 or 25A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part. For thermal and catalytic afterburners, Method 25 must be used except under the following circumstances, in which case Method 25A must be used:

    i) The allowable outlet concentration of VOM from the emissions control system is less than 50 ppmv, as carbon;

    ii) The VOM concentration at the inlet of the emissions control system and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon; and

    iii) Due to the high efficiency of the emissions control system, the anticipated VOM concentration at the emissions control system exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest shall be conducted using either Method 25 or Method 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest using Method 25;

D) During testing, the cleaning equipment shall be operated at representative operating conditions and flow rates;

5) An owner or operator using an emissions control system other than an afterburner or carbon adsorber shall conduct testing to demonstrate compliance with the requirements of subsection (b)(3) of this Section as set forth in the owner's or operator's plan approved by the Agency and USEPA as federally enforceable permit conditions pursuant to subsection (b)(3).

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

SUBPART F: COATING OPERATIONS

Section 219.204 Emission Limitations

Except as provided in Sections 219.205, 219.207, 219.208, 219.212, 219.215 and 219.216 of this Subpart, no owner or operator of a coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations for the specified coating. Except as otherwise provided in subsections (a), (c), (g), (h), (j), (l), (n), (o), and (q) of this Section, compliance with the emission limitations marked with an asterisk in this Section is required on and after March 15, 1996, and compliance with emission limitations not marked with an asterisk is required until March 15, 1996. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator, except where noted. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition. Compliance with this Subpart must be demonstrated through the applicable coating analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.211(c) of this Subpart except where noted. (Note: The equation presented in Section 219.206 of this Part shall be used to calculate emission limitations for determining compliance by add-on controls, credits for transfer efficiency, emissions trades and cross-line averaging.) The emission limitations are as follows:

a) Automobile or Light-Duty Truck Coating	kg/l	lb/gal

1) Prior to May 1, 2012:

A)	Prime coat	0.14 0.14*	(1.2) (1.2)*
B)	Primer surface coat	1.81 1.81*	(15.1) (15.1)*

BOARD NOTE: The primer surface coat limitation is in units of kg (lbs) of VOM per l (gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire primer surface operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b)(1)(A) and the recordkeeping and reporting requirements specified in Section 219.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 does not apply to the primer surface limitation.)

C)	Topcoat	kg/l	lb/gal
		1.81	(15.1)
		1.81*	(15.1)*

BOARD NOTE: The topcoat limitation is in units of kg (lbs) of VOM per l (gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire topcoat operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b)(1)(A) of this Part and the recordkeeping and reporting requirements specified in Section 219.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 of this Part does not apply to the topcoat limitation.)

D)	Final repair coat	kg/l	lb/gal
		0.58	(4.8)
		0.58*	(4.8)*

2) On and after May 1, 2012, subject automobile and light-duty truck coating lines shall comply with the following limitations. These limitations shall not apply to materials supplied in containers with a net volume of 0.47 liters (16 oz) or less, or a net weight of 0.45 kg (1 lb) or less:

A) Electrodeposition primer (EDP) operations. For purposes of this subsection (a)(2)(A), "electrodeposition" means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created.

	kg VOM/l coating solids applied	lb VOM/gal coating solids applied
i) When solids turnover ratio (R_T) is greater than or equal to 0.160	0.084	(0.7)
ii) When R_T is greater than or equal to 0.040 and less than 0.160	$0.084 \times 350^{0.160-R_T}$	$(0.084 \times 350^{0.160-R_T} \times 8.34)$

B) Primer surfacer operations

	kg VOM/l coating solids deposited	lb VOM/gal coating solids deposited
i) VOM content limitation	1.44	(12.0)

ii) Compliance with the limitation set forth in subsection (a)(2)(B)(i) shall be based on the daily-weighted average from an entire primer surfacer operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b)(1)(B) and the recordkeeping and reporting requirements specified in Section 219.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 does not apply to the primer surfacer limitation.

C) Topcoat operations

	kg VOM/l coating solids deposited	lb VOM/gal coating solids deposited
i) VOM content limitation	1.44	(12.0)

ii) Compliance with the limitation set forth in subsection (a)(2)(C)(i) shall be based on the daily-weighted average from an entire topcoat operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b)(1)(B) and the recordkeeping and reporting requirements specified in

Section 219.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 does not apply to the topcoat limitation.

D) Combined primer surfacer and topcoat operations

	kg VOM/l coating solids deposited	lb VOM/gal coating solids deposited
i) VOM content limitation	1.44	(12.0)

ii) Compliance with the limitation set forth in subsection (a)(2)(D)(i) shall be based on the daily-weighted average from the combined primer surfacer and topcoat operations. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b)(1)(B) and the recordkeeping and reporting requirements specified in Section 219.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 does not apply to the combined primer surfacer and topcoat limitation.

E) Final repair coat operations

	kg/l coatings	lb/gal coatings
i) VOM content limitation	0.58	(4.8)

ii) Compliance with the final repair operations limitation set forth in subsection (a)(2)(E)(i) shall be on an occurrence-weighted average basis, calculated in accordance with the equation below, in which clear coatings shall have a weighting factor of 2 and all other coatings shall have a weighting factor of 1. For purposes of this subsection (a)(2)(E)(ii), an "occurrence" is the application of the combination of coatings that constitute a final repair coat for a single automobile or light-duty truck. Section 219.205 does not apply to the final repair coat limitation.

$$VOM_{tot} = \frac{2VOM_{cc} + \sum_{i=1}^{n} VOM_i}{n+2}$$

where:

VOM_{tot} = Total VOM content of all coatings, as applied, on an occurrence weighted average basis, and used to determine compliance with this subsection (a)(2)(E).

i = Subscript denoting a specific coating applied.

n = Total number of coatings applied in the final repair operation, other than clear coatings.

VOM_{cc} = The VOM content, as applied, of the clear coat used in the final repair operation.

VOM_i = The VOM content of each coating used in the final repair operation, as applied, other than clear coatings.

F) Miscellaneous Materials. For reactive adhesives subject to this subsection (a)(2)(F), compliance shall be demonstrated in accordance with the methods and procedures set forth in appendix A to Subpart PPPP of 40 CFR 63, incorporated by reference in Section 219.112 of this Part.

		kg/l	lb/gal
i)	Glass bonding primer	0.90	(7.51)
ii)	Adhesive	0.25	(2.09)
iii)	Cavity wax	0.65	(5.42)
iv)	Trunk sealer	0.65	(5.42)
v)	Deadener	0.65	(5.42)
vi)	Gasket/gasket sealing material	0.20	(1.67)
vii)	Underbody coating	0.65	(5.42)
viii)	Trunk interior coating	0.65	(5.42)
ix)	Bedliner	0.20	(1.67)
x)	Weatherstrip adhesive	0.75	(6.26)

xi) Lubricating wax/compound	0.70	(5.84)

b) Can Coating	kg/l	lb/gal
1) Sheet basecoat and overvarnish		
A) Sheet basecoat	0.34 0.26*	(2.8) (2.2)*
B) Overvarnish	0.34 0.34	(2.8) (2.8)*
2) Exterior basecoat and overvarnish	0.34 0.25*	(2.8) (2.1)*
3) Interior body spray coat		
A) Two piece	0.51 0.44*	(4.2) (3.7)*
B) Three piece	0.51 0.51*	(4.2) (4.2)*
4) Exterior end coat	0.51 0.51*	(4.2) (4.2)*
5) Side seam spray coat	0.66 0.66*	(5.5) (5.5)*
6) End sealing compound coat	0.44 0.44*	(3.7) (3.7)*

c) Paper Coating

1) Prior to May 1, 2011:	kg/l	lb/gal
	0.28	(2.3)
2) On and after May 1, 2011:	kg VOM/kg (lb VOM/lb) solids applied	kg VOM/kg (lb VOM/lb) coatings applied
A) Pressure sensitive tape and label surface coatings	0.20	(0.067)
B) All other paper coatings	0.40	(0.08)

3) The paper coating limitation set forth in this subsection (c) shall not apply to any owner or operator of any paper coating line on which flexographic,

rotogravure, lithographic, or letterpress printing is performed if the paper coating line complies with the applicable emissions limitations in Subpart H of this Part. In addition, screen printing on paper is not regulated as paper coating, but is regulated under Subpart TT of this Part. On and after May 1, 2011, the paper coating limitation shall also not apply to coating performed on or in-line with any digital printing press, or to size presses and on-machine coaters on papermaking machines applying sizing or water-based clays.

d) Coil Coating	kg/l	lb/gal
	0.31	(2.6)
	0.20*	(1.7)*
e) Fabric Coating	0.35	(2.9)
	0.28*	(2.3)*
f) Vinyl Coating	0.45	(3.8)
	0.28*	(2.3)*
g) Metal Furniture Coating		
1) Prior to May 1, 2011:	kg/l	lb/gal
A) Air dried	0.34	(2.8)
B) Baked	0.28	(2.3)
2) On and after May 1, 2011:	kg/l (lb/gal)	kg/l (lb/gal) solids applied
A) General, One Component	0.275	0.40
	(2.3)	(3.3)
B) General, Multi-Component		
i) Air dried	0.340	0.55
	(2.8)	(4.5)
ii) Baked	0.360	0.61
	(3.0)	(5.1)
C) Extreme High Gloss		
i) Air dried	0.340	0.55
	(2.8)	(4.5)
ii) Baked	0.360	0.61
	(3.0)	(5.1)
D) Extreme Performance		
i) Air dried	0.420	0.80

	(3.5)	(6.7)
ii) Baked	0.360 (3.0)	0.61 (5.1)
E) Heat Resistant		
i) Air dried	0.420 (3.5)	0.80 (6.7)
ii) Baked	0.360 (3.0)	0.61 (5.1)
F) Metallic	0.420 (3.5)	0.80 (6.7)
G) Pretreatment Coatings	0.420 (3.5)	0.80 (6.7)
H) Solar Absorbent		
i) Air dried	0.420 (3.5)	0.80 (6.7)
ii) Baked	0.360 (3.0)	0.61 (5.1)

3) On and after May 1, 2011, the limitations set forth in this subsection (g) shall not apply to stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, or coating applications utilizing hand-held aerosol cans.

h) Large Appliance Coating

1) Prior to May 1, 2011:	kg/l	lb/gal
A) Air dried	0.34	(2.8)
B) Baked	0.28	(2.3)

2) On and after May 1, 2011:	kg/l (lb/gal)	kg/l (lb/gal) solids applied
A) General, One Component	0.275 (2.3)	0.40 (3.3)
B) General, Multi-Component		
i) Air dried	0.340 (2.8)	0.55 (4.5)
ii) Baked	0.275 (2.3)	0.40 (3.3)

C)	Extreme High Gloss		
	i) Air dried	0.340 (2.8)	0.55 (4.5)
	ii) Baked	0.360 (3.0)	0.61 (5.1)
D)	Extreme Performance		
	i) Air dried	0.420 (3.5)	0.80 (6.7)
	ii) Baked	0.360 (3.0)	0.61 (5.1)
E)	Heat Resistant		
	i) Air dried	0.420 (3.5)	0.80 (6.7)
	ii) Baked	0.360 (3.0)	0.61 (5.1)
F)	Metallic	0.420 (3.5)	0.80 (6.7)
G)	Pretreatment Coatings	0.420 (3.5)	0.80 (6.7)
H)	Solar Absorbent		
	i) Air dried	0.420 (3.5)	0.80 (6.7)
	ii) Baked	0.360	0.61

3) The limitations set forth in this subsection (h) shall not apply to the use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 1 (1 quart) in any one rolling eight-hour period. On and after May 1, 2011, these limitations shall also not apply to stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, or coating applications utilizing hand-held aerosol cans.

		kg/l	lb/gal
i)	Magnet Wire Coating	0.20	(1.7)
		0.20*	(1.7)*

j) Prior to May 1, 2012: Miscellaneous Metal Parts and Products Coating

1)	Clear coating	0.52	(4.3)
		0.52*	(4.3)*
2)	Extreme performance coating		
	A) Air dried	0.42	(3.5)
		0.42*	(3.5)*
	B) Baked	0.42	(3.5)
		0.40*	(3.3)*
3)	Steel pail and drum interior coating	0.52	(4.3)
		0.52*	(4.3)*
4)	All other coatings		
	A) Air dried	0.42	(3.5)
		0.40*	(3.3)*
	B) Baked	0.36	(3.0)
		0.34*	(2.8)*
5)	Metallic Coating		
	A) Air dried	0.42	(3.5)
		0.42*	(3.5)*
	B) Baked	0.36	(3.0)
		0.36	(3.0)*

6) For purposes of subsection (j)(5) of this Section, "metallic coating" means a coating which contains more than ¼ lb/gal of metal particles, as applied.

BOARD NOTE: On and after May 1, 2012, the limitations in Section 219.204(q) shall apply to this category of coating.

k)	Heavy Off-Highway Vehicle Products Coating	kg/l	lb/gal
1)	Extreme performance prime coat	0.42	(3.5)
		0.42*	(3.5)*
2)	Extreme performance topcoat (air dried)	0.42	(3.5)
		0.42*	(3.5)*
3)	Final repair coat (air dried)	0.42	(3.5)
		0.42*	(3.5)*

4) All other coatings are subject to the emission limitations for miscellaneous metal parts and products coatings in subsection (j).

l) Wood Furniture Coating

1)	Limitations before March 15, 1998:	kg/l	lb/gal
A)	Clear topcoat	0.67	(5.6)
B)	Opaque stain	0.56	(4.7)
C)	Pigmented coat	0.60	(5.0)
D)	Repair coat	0.67	(5.6)
E)	Sealer	0.67	(5.6)
F)	Semi-transparent stain	0.79	(6.6)
G)	Wash coat	0.73	(6.1)

BOARD NOTE: Prior to March 15, 1998, an owner or operator of a wood furniture coating operation subject to this Section shall apply all coatings, with the exception of no more than 37.8 l (10 gal) of coating per day used for touch-up and repair operations, using one or more of the following application systems: airless spray application system, air-assisted airless spray application system, electrostatic spray application system, electrostatic bell or disc spray application system, heated airless spray application system, roller coating, brush or wipe coating application system, dip coating application system or high volume low pressure (HVLP) application system.)

2) On and after March 15, 1998, wood furniture sealers and topcoats must comply with one of the limitations specified in subsections (l)(2)(A) through (E):

			kg VOM/kg solids	lb VOM/lb solids
A)	Topcoat		0.8	(0.8)
B)	Sealers and topcoats with the following limits:			
	i)	Sealer other than acid-cured alkyd amino vinyl sealer	1.9	(1.9)
	ii)	Topcoat other than acid-cured alkyd amino conversion varnish topcoat	1.8	(1.8)

iii)	Acid-cured alkyd amino vinyl sealer	2.3	(2.3)
iv)	Acid-cured alkyd amino conversion varnish topcoat	2.0	(2.0)

C) Meet the provisions of Section 219.215 of this Subpart for use of an averaging approach;

D) Achieve a reduction in emissions equivalent to the requirements of subsection (l)(2)(A) or (B) of this Section, as calculated using Section 219.216 of this Subpart; or

E) Use a combination of the methods specified in subsections (l)(2)(A) through (D) of this Section.

3) Other wood furniture coating limitations on and after March 15, 1998:

		kg/l	lb/gal
A)	Opaque stain	0.56	(4.7)
B)	Non-topcoat pigmented coat	0.60	(5.0)
C)	Repair coat	0.67	(5.6)
D)	Semi-transparent stain	0.79	(6.6)
E)	Wash coat	0.73	(6.1)

4) Other wood furniture coating requirements on and after March 15, 1998:

A) No source subject to the limitations of subsection (l)(2) or (3) of this Section and utilizing one or more wood furniture coating spray booths shall use strippable spray booth coatings containing more than 0.8 kg VOM/kg solids (0.8 lb VOM/lb solids), as applied.

B) Any source subject to the limitations of subsection (l)(2) or (3) of this Section shall comply with the requirements of Section 219.217 of this Subpart.

C) Any source subject to the limitations of subsection (l)(2)(A) or (B) of this Section and utilizing one or more continuous coaters, shall for each continuous coater, use an initial coating which complies with the limitations of subsection (l)(2)(A) or (B) of this Section. The viscosity of the coating in each reservoir shall always be greater than or equal to the viscosity of the initial coating in the reservoir. The owner or operator shall:

i) Monitor the viscosity of the coating in the reservoir with a viscosity meter or by testing the viscosity of the initial coating and retesting the coating in the reservoir each time solvent is added;

ii) Collect and record the reservoir viscosity and the amount and weight of VOM per weight of solids of coating and solvent each time coating or solvent is added; and

iii) Maintain these records at the source for a period of three years.

				kg/l	lb/gal
m)	Prior to May 1, 2012: Plastic Parts Coating: Automotive/Transportation				
	1)	Interiors			
		A)	Baked		
		i)	Color coat	0.49*	(4.1)*
		ii)	Primer	0.46*	(3.8)*
		B)	Air dried		
		i)	Color coat	0.38*	(3.2)*
		ii)	Primer	0.42*	(3.5)*
	2)	Exteriors (flexible and non-flexible)			
		A)	Baked		
		i)	Primer	0.60*	(5.0)*
		ii)	Primer non-flexible	0.54*	(4.5)*
		iii)	Clear coat	0.52*	(4.3)*
		iv)	Color coat	0.55*	(4.6)*
		B)	Air dried		
		i)	Primer	0.66*	(5.5)*
		ii)	Clear coat	0.54*	(4.5)*
		iii)	Color coat (red & black)	0.67*	(5.6)*
		iv)	Color coat (others)	0.61*	(5.1)*
	3)	Specialty			

A)	Vacuum metallizing basecoats, texture basecoats	0.66*	(5.5)*
B)	Black coatings, reflective argent coatings, air bag cover coatings, and soft coatings	0.71*	(5.9)*
C)	Gloss reducers, vacuum metallizing topcoats, and texture topcoats	0.77*	(6.4)*
D)	Stencil coatings, adhesion primers, ink pad coatings, electrostatic prep coatings, and resist coatings	0.82*	(6.8)*
E)	Head lamp lens coatings	0.89*	(7.4)*

BOARD NOTE: On and after May 1, 2012, the limitations in Section 219.204(q) shall apply to this category of coating.

n)	Prior to May 1, 2012: Plastic Parts Coating: Business Machine	kg/l	lb/gal
1)	Primer	0.14*	(1.2)*
2)	Color coat (non-texture coat)	0.28*	(2.3)*
3)	Color coat (texture coat)	0.28*	(2.3)*
4)	Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings	0.48*	(4.0)*
5)	Specialty Coatings		
A)	Soft coat	0.52*	(4.3)*
B)	Plating resist	0.71*	(5.9)*
C)	Plating sensitizer	0.85*	(7.1)*

BOARD NOTE: On and after May 1, 2012, the limitations in Section 219.204(q) shall apply to this category of coating.

o) Flat Wood Paneling Coatings. On and after August 1, 2010, flat wood paneling coatings shall comply with one of the following limitations:

1) 0.25 kg VOM/l of coatings (2.1 lb VOM/gal coatings); or

2) 0.35 kg VOM/l solids (2.9 lb VOM/gal solids).

BOARD NOTE: The Board has omitted subsection (p) and adopted a subsection (q) in order to preserve consistent labeling with similar requirements in 35 Ill. Adm. Code 218.

q) Miscellaneous Metal Parts and Products Coatings and Plastic Parts and Products Coatings On and After May 1, 2012. On and after May 1, 2012, the owner or operator of a miscellaneous metal or plastic parts coating line shall comply with the limitations in this subsection (q). The limitations in this subsection (q) shall not apply to aerosol coating products, powder coatings, or primer sealants and ejection cartridge sealants used in ammunition manufacturing. Primer sealants and ejection cartridge sealants shall instead be regulated under Subpart TT of this Part.

1) Metal Parts and Products. For purposes of this subsection (q)(1), "corrosion resistant basecoat" means a water-borne epoxy coating applied via an electrodeposition process to a metal surface prior to spray coating, for the purpose of enhancing corrosion resistance. The limitations in this subsection (q)(1) shall not apply to stencil coats, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, magnetic data storage disk coatings, and plastic extruded onto metal parts to form a coating. The limitations in Section 219.219, however, shall apply to these coatings unless specifically excluded in Section 219.219.

	kg VOM/l coating solids applied	lb VOM/gal coating solids applied
A) General one component coating		
i) Air dried	0.34 (2.8)	0.54 (4.52)
ii) Baked	0.28 (2.3)	0.40 (3.35)
B) General multi-component coating		
i) Air dried	0.34 (2.8)	0.54 (4.52)
ii) Baked	0.28 (2.3)	0.40 (3.35)
C) Camouflage coating	0.42 (3.5)	0.80 (6.67)
D) Electric-insulating varnish	0.42 (3.5)	0.80 (6.67)

E)	Etching filler		0.42 (3.5)	0.80 (6.67)
F)	Extreme high-gloss coating			
	i)	Air dried	0.42 (3.5)	0.80 (6.67)
	ii)	Baked	0.36 (3.0)	0.61 (5.06)
G)	Extreme performance coating			
	i)	Air dried	0.42 (3.5)	0.80 (6.67)
	ii)	Baked	0.36 (3.0)	0.61 (5.06)
H)	Heat-resistant coating			
	i)	Air dried	0.42 (3.5)	0.80 (6.67)
	ii)	Baked	0.36 (3.0)	0.61 (5.06)
I)	High performance architectural coating		0.42 (3.5)	0.80 (6.67)
J)	High temperature coating		0.42 (3.5)	0.80 (6.67)
K)	Metallic coating			
	i)	Air dried	0.42 (3.5)	0.80 (6.67)
	ii)	Baked	0.36 (3.0)	0.61 (5.06)
L)	Military specification coating			
	i)	Air dried	0.34 (2.8)	0.54 (4.52)
	ii)	Baked	0.28 (2.3)	0.40 (3.35)

M)	Mold-seal coating		0.42 (3.5)	0.80 (6.67)
N)	Pan backing coating		0.42 (3.5)	0.80 (6.67)
O)	Prefabricated architectural coating: multi-component			
	i)	Air dried	0.42 (3.5)	0.80 (6.67)
	ii)	Baked	0.28 (2.3)	0.40 (3.35)
P)	Prefabricated architectural coating: one-component			
	i)	Air dried	0.42 (3.5)	0.80 (6.67)
	ii)	Baked	0.28 (2.3)	0.40 (3.35)
Q)	Pretreatment coating		0.42 (3.5)	0.80 (6.67)
R)	Repair coats and touch-up coatings			
	i)	Air dried	0.42 (3.5)	
	ii)	Baked	0.36 (3.01)	
S)	Silicone release coating		0.42 (3.5)	0.80 (6.67)
T)	Solar-absorbent coating			
	i)	Air dried	0.42 (3.5)	0.80 (6.67)
	ii)	Baked	0.36 (3.0)	0.61 (5.06)
U)	Vacuum-metalizing coating		0.42	0.80

		(3.5)	(6.67)
V)	Drum coating, new, exterior	0.34 (2.8)	0.54 (4.52)
W)	Drum coating, new, interior	0.42 (3.5)	0.80 (6.67)
X)	Drum coating, reconditioned, exterior	0.42 (3.5)	0.80 (6.67)
Y)	Drum coating, reconditioned, interior	0.50 (4.2)	1.17 (9.78)
Z)	Ammunition sealants		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.36 (3.0)	0.61 (5.06)
AA)	Electrical switchgear compartment coatings		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.36 (3.0)	0.61 (5.06)
BB)	All other coatings		
	i) Air dried	0.40 (3.3)	0.73 (5.98)
	ii) Baked: primer/topcoat	0.34 (2.8)	0.54 (4.52)

2) Plastic Parts and Products: Miscellaneous. For purposes of this subsection (q)(2), miscellaneous plastic parts and products are plastic parts and products that are not subject to subsection (q)(3), (q)(4), (q)(5), or (q)(6) of this Section. The limitations in subsection (q)(2) shall not apply to touch-up and repair coatings; stencil coats applied on clear or transparent substrates; clear or translucent coatings; coatings applied at a paint manufacturing facility while conducting performance tests on the coatings; any individual coating category used in volumes less than 189.2 liters (50

gallons) in any one calendar year, if the total usage of all such coatings does not exceed 756.9 liters (200 gallons) per calendar year per source and substitute compliant coatings are not available; reflective coatings applied to highway cones; mask coatings that are less than 0.5 mm thick (dried) if the area coated is less than 25 square inches; electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings; and heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices if the total usage of all such coatings does not exceed 378.4 liters (100 gallons) per calendar year per source. The limitations in Section 219.219, however, shall apply to such coatings unless specifically excluded in Section 219.219.)

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	General one component coating	0.28 (2.3)	0.40 (3.35)
B)	General multi-component	0.42 (3.5)	0.80 (6.67)
C)	Electric dissipating coatings and shock-free coatings	0.80 (6.7)	8.96 (74.7)
D)	Extreme performance (2-pack coatings)	0.42 (3.5)	0.80 (6.67)
E)	Metallic coating	0.42 (3.5)	0.80 (6.67)
F)	Military specification coating		
	i) 1-pack coatings	0.28 (2.3)	0.54 (4.52)
	ii) 2-pack coatings	0.42 (3.5)	0.80 (6.67)
G)	Mold-seal coating	0.76 (6.3)	5.24 (43.7)
H)	Multi-colored coating	0.68 (5.7)	3.04 (25.3)
I)	Optical coating	0.80 (6.7)	8.96 (74.7)

J)	Vacuum-metalizing coating	0.80 (6.7)	8.96 (74.7)

3) Plastic Parts and Products Automotive/Transportation

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	High bake coatings − interior and exterior parts		
i)	Flexible primer	0.54 (4.5)	1.39 (11.58)
ii)	Non-flexible primer	0.42 (3.5)	0.80 (6.67)
iii)	Basecoats	0.52 (4.3)	1.24 (10.34)
iv)	Clear coat	0.48 (4.0)	1.05 (8.76)
v)	Non-basecoat/clear coat	0.52 (4.3)	1.24 (10.34)
B)	Low bake/air dried coatings − exterior parts		
i)	Primers	0.58 (4.8)	1.66 (13.80)
ii)	Basecoat	0.60 (5.0)	1.87 (15.59)
iii)	Clear coats	0.54 (4.5)	1.39 (11.58)
iv)	Non-basecoat/clear coat	0.60 (5.0)	1.87 (15.59)
C)	Low bake/air dried coatings − interior parts		
i)	Color coat	0.38 (3.2)	0.67 (5.66)

	ii) Primer	0.42 (3.5)	0.80 (6.67)
D)	Touchup and repair coatings	0.62 (5.2)	2.13 (17.72)
E)	Specialty		
	i) Vacuum metallizing basecoats	0.66 (5.5)	2.62 (21.8)
	ii) Vacuum metallizing topcoats	0.77 (6.4)	6.06 (49.1)

F) Red, yellow, and black coatings: Subject coating lines shall comply with a limit determined by multiplying the appropriate limit in subsections (q)(3)(A) through (q)(3)(C) of this Section by 1.15.

4) Plastic Parts and Products: Business Machine. The limitations of this subsection (q)(4) shall not apply to vacuum metallizing coatings, gloss reducers, texture topcoats, adhesion primers, electrostatic preparation coatings, stencil coats, and resist coats other than plating resist coats. The limitations in Section 219.219, however, shall apply to such coatings unless specifically excluded in Section 219.219.

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	Primers	0.35 (2.9)	0.57 (4.80)
B)	Topcoat	0.35 (2.9)	0.57 (4.80)
C)	Color coat (texture coat)	0.28 (2.3)	0.40 (4.80)
D)	Color coat (non-texture coat)	0.28 (2.3)	0.40 (4.80)
E)	Texture coats other than color texture coats	0.35 (2.9)	0.57 (4.80)
F)	EMI/RFI shielding coatings	0.48	1.05

		(4.0)	(8.76)
G)	Fog coat	0.26 (2.2)	0.38 (3.14)
H)	Touchup and repair	0.35 (2.9)	0.57 (4.80)

5) Pleasure Craft Surface Coatings

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	Extreme high gloss coating – topcoat	0.60 (5.0)	1.88 (15.6)
B)	High gloss coating – topcoat	0.42 (3.5)	0.80 (6.7)
C)	Pretreatment wash primer	0.78 (6.5)	6.67 (55.6)
D)	Finish primer surfacer		
	Prior to January 1, 2014	0.60 (5.0)	1.88 (15.6)
	On and after January 1, 2014	0.42 (3.5)	0.80 (6.7)
E)	High build primer/surfacer	0.34 (2.8)	0.55 (4.6)
F)	Aluminum substrate antifoulant coating	0.56 (4.7)	1.53 (12.8)
G)	Other substrate antifoulant coating	0.40 (3.3)	0.73 (5.8)
H)	Antifouling Sealer/Tie Coat	0.42 (3.5)	0.80 (6.7)
I)	All other pleasure craft surface coatings for metal or plastic	0.42 (3.5)	0.80 (6.7)

6) Motor Vehicle Materials

		kg/l (lb/gal) coatings
A)	Cavity wax	0.65 (5.42)
B)	Sealer	0.65 (5.42)
C)	Deadener	0.65 (5.42)
D)	Gasket/gasket sealing material	0.20 (1.67)
E)	Underbody coating	0.65 (5.42)
F)	Trunk interior coating	0.65 (5.42)
G)	Bedliner	0.20 (1.67)
H)	Lubricating wax/compound	0.70 (5.84)

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.205 Daily-Weighted Average Limitations

No owner or operator of a coating line subject to the limitations of Section 219.204 of this Subpart and complying by means of this Section shall operate the subject coating line unless the owner or operator has demonstrated compliance with subsection (a), (b), (c), (d), (e), (f), (g), (h), (i), or (j) of this Section (depending upon the category of coating) through the applicable coating analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.211(d) of this Subpart:

a) No owner or operator of a coating line subject to only one of the limitations from among Section 219.204(a)(1)(A), (a)(1)(D), (a)(2)(A), (a)(2)(E), (a)(2)(F), (c)(1), (d), (e), (f), (i), or (o) of this Subpart shall apply coatings on any such coating line, during any day, whose daily-weighted average VOM content exceeds the emission limitation to which the coatings are subject.

b) Prior to May 1, 2012, no owner or operator of a miscellaneous metal parts and products coating line subject to the limitations of Section 219.204(j) of this Subpart shall apply coatings to miscellaneous metal parts or products on the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(j) of this Subpart during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one numerical emission limitation in Section 219.204(j) of this Subpart, during the same day, the owner or operator shall have a site-specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy), 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.

c) No owner or operator of a can coating line subject to the limitations of Section 219.204(b) of this Subpart shall operate the subject coating line using a coating with a VOM content in excess of the limitations specified in Section 219.204(b) of this Subpart unless all of the following requirements are met:

1) An alternative daily emission limitation for the can coating operation, i.e., for all of the can coating lines at the source, shall be determined according to subsection (c)(2) of this Section. Actual daily emissions shall never exceed the alternative daily emission limitation and shall be calculated by use of the following equation.

$$E_b = \sum_{i=1}^{n} V_i C_i$$

where:

E_d = Actual VOM emissions for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of coatings applied in the can coating operation, i.e., all can coating lines at the source;

V_i = Volume of each coating applied for the day in units of l/day (gal/day) of coating (minus water and any compounds that are specifically exempted from the definition of VOM);

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM).

2) The alternative daily emission limitation (A_d) shall be determined for the can coating operation, i.e., for all of the can coating lines at the source, on a daily basis as follows:

$$A_d = \sum_{i=1}^{n} V_i L_i \frac{(D_i - C_i)}{(D_i - L_i)}$$

where:

A_d = The VOM emissions allowed for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of surface coatings applied in the can coating operation;

C_i = The VOM content of each surface coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM);

D_i = The density of VOM in each coating applied. For the purposes of calculating A_d, the density is 0.882kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_i = Volume of each surface coating applied for the day in units of l (gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM);

L_i = The VOM emission limitation for each surface coating applied as specified in Section 219.204(b) of this Subpart in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM).

d) No owner or operator of a heavy off-highway vehicle products coating line subject to the limitations of Section 219.204(k) of this Subpart shall apply coatings to heavy off-highway vehicle products on the subject coating line unless the requirements of subsection (d)(1) or (d)(2) of this Section are met.

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section

219.204(k) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one numerical emission limitation in Section 219.204(k) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy), 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.

e) No owner or operator of a wood furniture coating line subject to the limitations of Section 219.204(l)(1) or (l)(3) of this Subpart shall apply coatings to wood furniture on the subject coating line unless the requirements of subsection (e)(1) or (e)(2) of this Section, in addition to the requirements specified in the note to Section 219.204(l)(1) of this Subpart, are met.

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(l)(1) or (l)(3) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.67 kg/l (5.6 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one numerical emission limitation in Section 219.204(l)(1) or (l)(3) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy), 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.

f) Prior to May 1, 2012, no owner or operator of a plastic parts coating line subject to the limitations of Section 219.204(m) or (n) of this Subpart shall apply coatings to business machine or automotive/transportation plastic parts on the subject coating line unless the requirements of subsection (f)(1) or (f)(2) of this Section are met.

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(m) or (n) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one

numerical emission limitation in Section 219.204(m) or (n) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.

g) No owner or operator of a metal furniture coating line subject to the limitations of Section 219.204(g) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (g)(1) or (g)(2) of this Section are met:

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(g) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one numerical emission limitation in Section 219.204(g) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.

h) No owner or operator of a large appliance coating line subject to the limitations of Section 219.204(h) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (h)(1) or (h)(2) of this Section are met.

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(h) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one numerical emission limitation in Section 219.204(h) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.

i) On and after May 1, 2011, no owner or operator of a paper coating line subject to the limitations of Section 219.204(c) of this Subpart shall apply coatings on the subject coating line unless the requirements in subsection (i)(1) or (i)(2) of this Section are met:

1) For each coating line that applies multiple coatings, all of which are

subject to the same numerical emission limitation within Section 219.204(c) during the same day (e.g., all coatings used on the line are subject to 0.40 kg/kg solids (0.08 kg/kg coatings)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one numerical emission limitation in Section 219.204(c) during the same day, the owner or operator shall have a site-specific proposal approved by the Agency and approved by USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy), 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.

j) On and after May 1, 2012, no owner or operator of a miscellaneous metal parts and products coating line, plastic parts or products coating line, pleasure craft surface coating line, or motor vehicle materials coating line subject to the limitations of Section 219.204(q) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (j)(1) or (j)(2) of this Section are met:

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(q) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

2) For each coating line that applies coatings subject to more than one numerical emission limitation in Section 219.204(q) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.

(Source: Amended at 34 Ill. Reg. 14326, effective September 14, 2010)

Section 219.206 Solids Basis Calculation

Limitations in terms of kg (lbs) of VOM emissions per 1 (gal) of solids as applied at each coating applicator shall be determined by the following equation:

$$S = \frac{C}{1 - (C/D)}$$

where:

S = The limitation on VOM emissions in terms of kg VOM/1 of solids;

C = The limitation on VOM emissions in terms of kg/l (lbs/gal) of coating (minus water and any compounds which are specifically excluded from the definition of VOM) specified in Section 219.204;

D = The density of VOM in the coating. For the purposes of calculating S, the density is 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM).

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.207 Alternative Emission Limitations

a) Any owner or operator of a coating line subject to Section 219.204 of this Subpart, except coating lines subject to Section 219.204(q)(6), may comply with this Section, rather than with Section 219.204 of this Subpart, if a capture system and control device are operated at all times the coating line is in operation and the owner or operator demonstrates compliance with subsection (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), or (m) of this Section (depending upon the source category) through the applicable coating analysis and capture system and control device efficiency test methods and procedures specified in Section 219.105 of this Part and the recordkeeping and reporting requirements specified in Section 219.211(e) of this Subpart; and the control device is equipped with the applicable monitoring equipment specified in Section 219.105(d) of this Part and the monitoring equipment is installed, calibrated, operated and maintained according to vendor specifications at all times the control device is in use. A capture system and control device, which does not demonstrate compliance with subsection (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), or (m) of this Section may be used as an alternative to compliance with Section 219.204 of this Subpart only if the alternative is approved by the Agency and approved by the USEPA as a SIP revision.

b) Alternative Add-On Control Methodologies

1) The coating line is equipped with a capture system and control device that provides 81 percent reduction in the overall emissions of VOM from the coating line and the control device has a 90 percent efficiency; or

2) The system used to control VOM from the coating line is demonstrated to have an overall efficiency sufficient to limit VOM emissions to no more than what is allowed under Section 219.204 of this Subpart. Use of any control system other than an afterburner, carbon adsorption, condensation, or absorption scrubber system can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision. The use of transfer efficiency credits can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision. Baseline transfer efficiencies and transfer efficiency test methods must be approved by the Agency and the USEPA. Such overall efficiency is to be determined as follows:

A) Obtain the emission limitation from the appropriate subsection in Section 219.204 of this Subpart;

B) Unless complying with an emission limitation in Section 219.204 that is already expressed in terms of weight of VOM per volume of solids, calculate "S" according to the equation in Section 219.206 of this Subpart. For coating lines subject to an emission limitation in Section 219.204 that is already expressed in terms of weight of VOM per volume of solids, "S" is equal to such emission limitation;

C) Calculate the overall efficiency required according to Section 219.105(e) of this Part. For the purposes of calculating this value, according to the equation in Section 219.105(e)(2) of this Part, VOM_1 is equal to the value of "S" as determined in subsection (b)(2)(B) of this Section. If the coating line is subject to an emission limitation in Section 219.204 of this Subpart that is already expressed in terms of weight of VOM per volume of solids, VOM_1 is equal to that emission limitation.

c) No owner or operator of a coating line subject to only one of the emission limitations from among Section 219.204(a)(1)(A), (a)(1)(D), (a)(2)(A),(a)(2)(E), (a)(2)(F), (c)(1), (d), (e), (f), or (i) of this Subpart and equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met. No owner or operator of a coating line subject to Section 219.204(a)(1)(B) (a) (1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) of this Subpart and equipped with a capture system and control device shall operate the coating line unless the owner or operator demonstrates compliance with such limitation in accordance with the topcoat protocol referenced in Section 219.105(b)(1)(A) or (b)(1)(B), as applicable.

d) No owner or operator of a miscellaneous metal parts and products coating line that applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(j) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), and that is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

e) No owner or operator of a heavy off-highway vehicle products coating line that applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(k) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), and that is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

f) No owner or operator of a wood furniture coating line that applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(l) of this Subpart (e.g., all coatings used on the line are subject to 0.67 kg/l (5.6 lbs/gal)), and that is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met. If compliance is achieved by meeting the requirements in subsection (b)(2) of this Section, then the provisions in the note to Section 219.204(l) of this Subpart must also be met.

g) No owner or operator of a can coating line equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (g)(1) or (g)(2) of this Section are met.

1) An alternative daily emission limitation for the can coating operation, i.e., for all of the can coating lines at the source, shall be determined according to Section 219.205(c)(2) of this Subpart. Actual daily emissions shall never exceed the alternative daily emission limitation and shall be calculated by use of the following equation:

$$E_d = \sum_{i=1}^{n} V_i C_i (1 - F_i)$$

where:

E_d = Actual VOM emissions for the day in units of kg/day (lbs/day);

i = Subscript denoting the specific coating applied;

n = Total number of surface coatings as applied in the can coating operation;

V_i = Volume of each coating as applied for the day in units of l/day (gal/day) of coating (minus water and any compounds that are specifically exempted from the definition of VOM);

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM); and

F_i = Fraction, by weight, of VOM emissions from the surface coating, reduced or prevented from being emitted to the ambient air. This is the overall efficiency of the capture system and control device.

2) The coating line is equipped with a capture system and control device that

provide 75 percent reduction in the overall emissions of VOM from the coating line and the control device has a 90 percent efficiency.

h) No owner or operator of a plastic parts coating line that applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(m) or (n) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), and that is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

i) Prior to May 1, 2011, no owner or operator of a metal furniture coating line that applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(g) of this Subpart (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), and that is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

j) Prior to May 1, 2011, no owner or operator of a large appliance coating line that applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(h) of this Subpart (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), and that is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

k) On and after May 1, 2011, no owner or operator of a paper coating line, metal furniture coating line, or large appliance coating line that is equipped with a capture system and control device shall operate the subject coating line unless either:

1) The capture system and control device provide at least 90 percent reduction in the overall emissions of VOM from the coating line; or

2) The owner or operator complies with the applicable limitation set forth in Section 219.204 of this Subpart by utilizing a combination of low-VOM coatings and a capture system and control device.

l) No owner or operator of a flat wood paneling coating line that is equipped with a capture system and control device shall operate the subject coating line unless either:

1) The capture system and control device provide at least 90 percent reduction in the overall emissions of VOM from the coating line; or

2) The owner or operator of the flat wood paneling coating line complies with all requirements set forth in subsection (b)(2) of this Section.

m) On and after May 1, 2011, no owner or operator of a miscellaneous metal parts and products coating line, plastic parts and products coating line, or pleasure craft surface coating line that is equipped with a capture system and control device shall operate the subject coating line unless:

1) The capture system and control device provide at least 90 percent reduction in the overall emissions of VOM from the coating line; or

2) The owner or operator of the coating line complies with all requirements set forth in subsection (b)(2) of this Section.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.208 Exemptions From Emission Limitations

a) Exemptions for all coating categories except wood furniture coating. The limitations of this Subpart shall not apply to coating lines within a source, that otherwise would be subject to the same subsection of Section 219.204 (because they belong to the same coating category, e.g., can coating), provided that combined actual emissions of VOM from all lines at the source subject to that subsection never exceed 6.8 kg/day (15 lbs/day) before the application of capture systems and control devices. (For example, can coating lines within a source would not be subject to the limitations of Section 219.204(b) of this Subpart if the combined actual emissions of VOM from the can coating lines never exceed 6.8 kg/day (15 lbs/day) before the application of capture systems and control devices.) Prior to May 2012, volatile organic material emissions from heavy off-highway vehicle products coating lines must be combined with VOM emissions from miscellaneous metal parts and products coating lines to determine applicability. On and after May 1, 2012, VOM emissions from heavy off-highway vehicle products coating lines shall be combined with VOM emissions from miscellaneous metal parts and products coating lines and plastic parts and products coating lines to determine applicability. Any owner or operator of a coating source shall comply with the applicable coating analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.211(a) of this Subpart if total VOM emissions from the subject coating lines are always less than or equal to 6.8 kg/day (15 lbs/day) before the application of capture systems and control devices and, therefore, are not subject to the limitations of Section 219.204 of this Subpart. Once a category of coating lines at a source is subject to the limitations in Section 219.204 of this Part the coating lines are always subject to the limitations in Section 219.204 of this Subpart.

b) Applicability for wood furniture coating

1) The limitations of this Subpart shall apply to a source's wood furniture coating lines if the source contains process emission units, not regulated by Subparts B, E, F (excluding Section 219.204(l) of this Subpart), H (excluding Section 219.405 of this Part), Q, R, S, T (excluding Section

219.486 of this Part), V, X, Y, Z or BB of this Part, which as a group both:

A) Have a maximum theoretical emissions of 91 Mg (100 tons) or more per calendar year of VOM if no air pollution control equipment were used, and

B) Are not limited to less than 91 Mg (100 tons) of VOM per calendar year if no air pollution control equipment were used, through production or capacity limitations contained in a federally enforceable permit or SIP revision.

2) The limitations of this Subpart shall apply to a source's wood furniture coating lines, on and after March 15, 1996, if the source contains process emission units, which as a group, have a potential to emit 22.7 Mg (25 tons) or more of VOM per calendar year and have not limited emissions to less than 22.7 Mg (25 tons) of VOM per calendar year through production or capacity limitations contained in a federally enforceable operating permit or SIP revision, and that:

A) Are not regulated by Subparts B, E, F (excluding Section 219.204(l) of this Subpart), H, Q, R, S, T (excluding Section 219.486 of this Part), V, X, Y, Z or BB of this Part; and

B) Are not included in any of the following categories: synthetic organic chemical manufacturing industry (SOCMI) distillation, SOCMI reactors, plastic parts coating (business machines), plastic parts coating (other), offset lithography, industrial wastewater, autobody refinishing, SOCMI batch processing, volatile organic liquid storage tanks and clean-up solvents operations.

3) If a source ceases to fulfill the criteria of subsection (b)(1) or (b)(2) of this Section, the limitations of Section 219.204(l) of this Subpart shall continue to apply to any wood furniture coating line which was ever subject to the limitations of Section 219.204(l) of this Subpart.

4) For the purposes of subsection (b) of this Section, an emission unit shall be considered to be regulated by a Subpart if it is subject to the limitations of that Subpart. An emission unit is not considered regulated by a Subpart if it is not subject to the limits of that Subpart, e.g., the emission unit is covered by an exemption in the Subpart or the applicability criteria of the Subpart are not met.

5) Any owner or operator of a wood furniture coating line to which the limitations of this Subpart are not applicable due to the criteria in subsection (b) of this Section shall, upon request by the Agency or the USEPA, submit records to the Agency and the USEPA within 30 calendar days from the date of the request that document that the coating line is exempt from the limitations of this Subpart.

c) On and after March 15, 1996, the limitations of this Subpart shall not apply to touch-up and repair coatings used by a coating source described by Section 219.204(b), (d), (f), (g), (i), and (q)(5) of this Subpart; provided that the source-wide volume of such coatings used does not exceed 0.95 1 (1 quart) per eight-hour period or exceed 209 1/yr (55 gal/yr) for any rolling 12 month period. Recordkeeping and reporting for touch-up and repair coatings shall be consistent with subsection (d) of this Section.

d) Prior to May 1, 2012, the limitations of this Subpart shall not apply to touch-up and repair coatings used by a coating source described by Section 219.204(j), (m), and (n) of this Subpart, provided that the source-wide volume of the coatings used does not exceed 0.95 l (1 quart) per eight-hour period or exceed 209 l/yr (55 gal/yr) for any rolling twelve month period. Recordkeeping and reporting for touch-up and repair coatings shall be consistent with subsection (e) of this Section.

e) On and after March 15, 1996, the owner or operator of a coating line or a group of coating lines using touch-up and repair coatings that are exempted from the limitations of Section 219.204(b), (d), (f), (g), (i), (j), (m), (n), and (q)(5) of this Subpart because of the provisions of subsection (c) or (d) of this Section shall:

1) Collect and record the name, identification number, and volume used of each touch-up and repair coating, as applied on each coating line, per eight-hour period and per month;

2) Perform calculations on a daily basis, and maintain at the source records of such calculations of the combined volume of touch-up and repair coatings used source-wide for each eight-hour period;

3) Perform calculations on a monthly basis, and maintain at the source records of such calculations of the combined volume of touch-up and repair coatings used source-wide for the month and the rolling 12 month period;

4) Prepare and maintain at the source an annual summary of the information required to be compiled pursuant to subsections (e)(1) and (e)(2) of this Section on or before January 31 of the following year;

5) Maintain at the source for a minimum period of three years all records required to be kept under this subsection (e) and make such records available to the Agency upon request;

6) Notify the Agency in writing if the use of touch-up and repair coatings at the source ever exceeds a volume of 0.95 1 (1 quart) per eight-hour period or exceeds 209 1/yr (55 gal/yr) for any rolling 12 month period within 30 days after any such exceedance. Such notification shall include a copy of any records of such exceedance; and

7) "Touch-up and repair coatings" means, for purposes of 35 Ill. Adm. Code 219.208, any coating used to cover minor scratches and nicks that occur during manufacturing and assembly processes.

(Source: Amended at 35 Ill. Reg. 18830, effective October 25, 2011)

Section 219.209 Exemption From General Rule on Use of Organic Material

No owner or operator of a coating line subject to the limitations of Section 219.204 of this Part is required to meet the limitations of Subpart G (Section 219.301 or 219.302) of this Part, after the date by which the coating line is required to meet Section 219.204 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.210 Compliance Schedule

Every owner or operator of a coating line (of a type included within Section 219.204 of this Subpart) shall comply with the requirements of Section 219.204, 219.205, 219.207 or 219.208 and Section 219.211 or Sections 219.212 and 219.213 of this Subpart in accordance with the appropriate compliance schedule as specified in subsection (a), (b), (c), (d), (e), (f), (g), (h), or (i) of this Section:

a) No owner or operator of a coating line that is exempt from the limitations of Section 219.204 of this Subpart because of the criteria in Section 219.208(a) or (b) of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.211(b) of this Subpart.

b) No owner or operator of a coating line complying by means of Section 219.204 of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 219.204 and 219.211(c) of this Subpart.

c) No owner or operator of a coating line complying by means of Section 219.205 of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 219.205 and 219.211(d) of this Subpart.

d) No owner or operator of a coating line complying by means of Section 219.207 of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 219.207 and 219.211(e) of this Subpart.

e) No owner or operator of a coating line subject to one or more of the emission limitations contained in Section 219.204 of this Subpart on or after March 15, 1996, choosing to comply by means of Section 219.204, 219.205 or 219.207 of this Subpart, shall operate said coating line on or after March 15, 1996, unless the owner or operator complies with and continues to comply with, respectively, the applicable requirements in Section 219.204, or the alternative control options in Section 219.205 or 219.207 and the requirements of Section 219.211.

f) No owner or operator of a coating line subject to one or more of the emission limitations contained in Section 219.204 of this Subpart on or after March 15, 1996, choosing to comply by means of Section 219.212 of this Subpart, shall operate said coating line on or after March 15, 1996, unless the owner or operator complies with and continues to comply with the requirements of Sections 219.212 and 219.213 of this Subpart.

g) No owner or operator of a coating line subject to the emission limitations in Section 219.204(c)(2), (g)(2), or (h)(2) of this Subpart shall operate that coating line on or after a date consistent with Section 219.106(c) of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.204(c)(2), (g)(2), or (h)(2), as applicable, or the alternative control options in Section 219.205 or 219.207, and all applicable requirements in Sections 219.211 and 219.218 of this Subpart.

h) No owner or operator of a coating line subject to the emission limitations contained in Section 219.204(o) of this Subpart shall operate that coating line on or after a date consistent with Section 219.106(d) of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.204(o) or the alternative control options in Section 219.205 or 219.207, and the requirements of Sections 219.211 and 219.217 of this Subpart, as applicable.

i) No owner or operator of a coating line subject to the emission limitations in Section 219.204(a)(2) or (q) of this Subpart, or subject to the limitations in Section 219.219 of this Subpart, shall operate the coating line on or after a date consistent with Section 219.106(e) of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.204(a)(2) or (q), if applicable, or the alternative control options in Section 219.205 or 219.207, and all applicable requirements in Sections 219.211 and 219.219 of this Subpart.

(Source: Amended at 34 Ill. Reg. 14326, effective September 14, 2010)

Section 219.211 Recordkeeping and Reporting

a) The VOM content of each coating and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in Section 219.105 of this Part to establish the records required under this Section.

b) Any owner or operator of a coating line that is exempted from the limitations of Section 219.204 of this Subpart because of Section 219.208(a) or (b) of this Subpart shall comply with the following:

1) For sources exempt from Section 219.208(a) of this Subpart, by a date consistent with Section 219.106 of this Part, the owner or operator of a coating line or group of coating lines referenced in subsection (b) of this Section shall certify to the Agency that the coating line or group of coating lines is exempt under the provisions of Section 219.208(a) of this Subpart. Such certification shall include:

A) A declaration that the coating line is exempt from the limitations of Section 219.204 of this Subpart because of Section 219.208(a) of this Subpart; and

B) Calculations that demonstrate that the combined VOM emissions from the coating line and all other coating lines in the same category never exceed 6.8 kg (15 lbs) per day before the application of capture systems and control devices. The following equation shall be used to calculate total VOM emissions:

$$T_e = \sum_{j=1}^{m} \sum_{i=1}^{n} \left(A_i B_i\right)_j$$

where:

T_e = Total VOM emissions from coating lines each day before the application of capture systems and control devices in units of kg/day (lbs/day);

m = Number of coating lines at the source that otherwise would be subject to the same subsection of Section 219.104 of this Part (because they belong to the same category, e.g., can coating);

j = Subscript denoting an individual coating line;

n = Number of different coatings as applied each day on each coating line;

i = Subscript denoting an individual coating;

A_i = Weight of VOM per volume of each coating (minus water and any compounds that are specifically exempted from the definition of VOM) as applied each day on each coating line in units of kg VOM/l (lbs VOM/gal); and

B_i = Volume of each coating (minus water and any compounds that are specifically exempted from the definition of VOM) as applied each day on each coating line in units of l/day (gal/day). The instrument or method by which the owner or operator accurately measured or calculated the volume of each coating as applied on each coating line each day shall be described in the certification to the Agency.

2) For sources exempt under Section 219.208(b) of this Subpart, by March 15, 1998, or upon initial start-up, the owner or operator of a coating line or a group of coating lines referenced in subsection (b) of this Section shall certify to the Agency that the source is exempt under the provisions of Section 219.208(b) of this Subpart. Such certification shall include:

A) A declaration that the source is exempt from the limitations of Section 219.204(l) of this Subpart because of Section 219.208(b) of this Subpart; and

B) Calculations that demonstrate that the source meets the criteria of exemption because of Section 219.208(b) of this Subpart.

3) For sources exempt under Section 219.208(a) of this Subpart, on and after a date consistent with Section 219.106 of this Part, the owner or operator of a coating line or group of lines referenced in this subsection shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating as applied on each coating line; and

B) The weight of VOM per volume and the volume of each coating (minus water and any compounds that are specifically exempted from the definition of VOM) as applied each day on each coating line.

4) For sources exempt under Section 219.208(b) of this Subpart, on and after March 15, 1998, the owner or operator of a coating line or group of coating lines referenced in this subsection (b) shall collect and record all of the following information for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating as applied on each coating line; and

B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied on each coating line on a monthly basis.

5) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a coating line or group of coating lines exempted from the limitations of Section 219.204 of this Subpart because of Section

219.208(a) of this Subpart shall notify the Agency of any record showing that total VOM emissions from the coating line or group of coating lines exceed 6.8 kg (15 lbs) in any day before the application of capture systems and control devices by sending a copy of such record to the Agency within 30 days after the exceedance occurs.

6) On and after March 15, 1998, any owner or operator of a source exempt from the limitations of Section 219.204(l) of this Subpart because of Section 219.208(b) of this Subpart shall notify the Agency if the source's VOM emissions exceed the limitations of Section 219.208(b) of this Subpart by sending a copy of calculations showing such an exceedance within 30 days after the change occurs.

c) Any owner or operator of a coating line subject to the limitations of Section 219.204 of this Subpart other than Section 219.204(a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) of this Subpart and complying by means of Section 219.204 of this Subpart shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance from an existing subject coating line from Section 219.205, Section 219.207, Section 219.215, or Section 219.216 of this Subpart to Section 219.204 of this Subpart; the owner or operator of a subject coating line shall certify to the Agency that the coating line will be in compliance with Section 219.204 of this Subpart on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date. The certification shall include:

A) The name and identification number of each coating as applied on each coating line;

B) The weight of VOM per volume of each coating (minus water and any compounds that are specifically exempted from the definition of VOM) as applied each day on each coating line;

C) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line;

D) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line;

E) For coating lines subject to the limitations of Section 219.204(g)(2) or (h)(2) of this Subpart, the application methods used to apply coatings on the subject coating line and the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line;

F) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids, as applicable, for each coating as applied each day on each coating line;

G) For coating lines subject to the limitations of Section 219.204(a)(2)(A) of this Subpart, the weight of VOM per volume of solids in each coating as applied each day on each coating line, and the solids turnover ratio of the EDP operation, with supporting calculations;

H) For coating lines subject to the limitations of Section 219.204(a)(2)(E), the weight of VOM per volume and volume of each coating used in the final repair coat operation, and the weight of VOM per volume of the final repair coat as applied, calculated on an occurrence weighted average basis;

I) For coating lines subject to the limitations of Section 219.204(q) of this Subpart, the weight of VOM per volume of each coating, or the weight of VOM per volume of solids in each coating, as applicable, as applied each day on each coating line.

2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day, unless otherwise specified, for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating as applied on each coating line;

B) The weight of VOM per volume of each coating (minus water and any compounds that are specifically exempted from the definition of VOM) as applied each day on each coating line;

C) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line and certified product data sheets for each coating;

D) On and after March 15, 1998, for wood furniture coating spray booths subject to the limitation of Section 219.204(l)(4)(A) of this Subpart, the weight of VOM per weight of solids in each strippable spray booth coating as applied each day on each spray booth and certified product data sheets for each coating;

E) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line, and certified product data sheets for each coating;

F) For coating lines subject to the limitations of Section 219.204(g)(2) or 219.204(h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line, and certified product data sheets for each coating;

G) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids, as applicable, for each coating, as applied each day on each coating line;

H) For coating lines subject to the limitations of Section 219.204(a)(2)(A) of this Subpart, the weight of VOM per volume of solids in each coating as applied each day on each coating line, certified product data sheets for each coating, and the solid turnover ratio for the EDP operation, calculated on a calendar monthly basis, with supporting calculations;

I) For coating lines subject to the limitations of Section 219.204(a)(2)(E), the weight of VOM per volume and volume of each coating used in the final repair coat operation, the weight of VOM per volume of the final repair coat as applied, calculated on an occurrence weighted average basis, and certified product data sheets for each coating;

J) For coating lines subject to the limitations of Section 219.204(q) of this Subpart, the weight of VOM per volume of each coating, or the weight of VOM per volume of solids in each coating, as applicable, as applied each day on each coating line, and certified product data sheets for each coating.

3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:

A) Any record showing violation of Section 219.204 of this Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance from Section 219.204 to Section 219.205 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (d)(1) or (e)(1), as applicable. Upon changing the method of compliance from Section 219.204 to Section 219.205 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (d) or (e) of this Section, as applicable.

d) Any owner or operator of a coating line subject to the limitations of Section 219.204 of this Subpart and complying by means of Section 219.205 of this Subpart shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance for an existing subject coating line from Section 219.204 or Section 219.207 to Section 219.205 of this Subpart; the owner or operator of the subject coating line shall certify to the Agency that the coating line will be in compliance with Section 219.205 on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date. The certification shall include:

A) The name and identification number of each coating line which will comply by means of Section 219.205 of this Subpart.

B) The name and identification number of each coating as applied on each coating line.

C) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.

D) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line.

E) For coating lines subject to the limitations of Section 219.204(a)(2)(A) of this Subpart, the weight of VOM per volume of solids in each coating as applied each day on each coating line.

F) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line.

G) For coating lines subject to the limitations of Section 219.204(g)(2) or (h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.

H) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids, as applicable, for each coating, as applied each day on each coating line.

I) For coating lines subject to the limitations of Section 219.204(q) of this Subpart, the weight of VOM per volume of each coating, or the weight of VOM per volume of solids in each coating, as applicable, as applied each day on each coating line.

J) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each coating line.

K) The method by which the owner or operator will create and maintain records each day as required in subsection (d)(2) of this Section.

L) An example of the format in which the records required in subsection (d)(2) of this Section will be kept.

2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating as applied on each coating line.

B) The weight of VOM per volume and the volume of each coating (minus water and any compounds that are specifically exempted from the definition of VOM) as applied each day on each coating line.

C) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line.

D) For coating lines subject to the limitations of Section 219.204(a)(2)(A) of this Subpart, the weight of VOM per volume of solids in each coating as applied each day on each coating line.

E) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line.

F) For coating lines subject to the limitations of Section 219.204(g)(2) or (h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.

G) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids, as applicable, for each coating, as applied each day on each coating line.

H) For coating lines subject to the limitations of Section 219.204(q) of this Subpart, the weight of VOM per volume of each coating, or the weight of VOM per volume of solids in each coating, as applicable, as applied each day on each coating line.

I) The daily-weighted average VOM content of all coatings as applied on each coating line as defined in Section 219.104 of this Part.

3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:

A) Any record showing violation of Section 219.205 of this Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance with this Subpart from Section 219.205 to Section 219.204 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (c)(1) or (e)(1) of this Section, as applicable. Upon changing the method of compliance with this Subpart from Section 219.205 to Section 219.204 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (c) or (e) of this Section, as applicable.

e) Any owner or operator of a coating line subject to the limitations of Section 219.207 and complying by means of Section 219.207(c), (d), (e), (f), (g), (h), or (k), (l), (m), or (n) of this Subpart shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance for an existing coating line from Section 219.204 or Section 219.205 to

Section 219.207 of this Subpart, the owner or operator of the subject coating line shall perform all tests and submit to the Agency the results of all tests and calculations necessary to demonstrate that the subject coating line will be in compliance with Section 219.207 of this Subpart on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date.

2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

A) The weight of VOM per volume of coating solids as applied each day on each coating line, if complying pursuant to Section 219.207(b)(2) of this Subpart.

B) Control device monitoring data.

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

D) 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.

3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:

A) Any record showing violation of Section 219.207 of this Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance with this Subpart from Section 219.207 to Section 219.204 or Section 219.205 of this Subpart, the owner or operator shall comply with all requirements of subsection (c)(1) or (d)(1) of this Section, respectively. Upon changing the method of compliance with this Subpart from Section 219.207 to Section 219.204 or Section 219.205 of this Subpart, the owner or operator shall comply with all requirements of subsection (c) or (d) of this Section, respectively.

f) Any owner or operator of a primer surfacer operation or topcoat operation, or combined primer surfacer and topcoat operation, subject to the limitations of Section 219.204(a)(1)(B), (a)(1)(B), (a)(2)(C), or (a)(2)(D) of this Subpart shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating operation, the owner or operator of a subject coating operation shall certify to the Agency that the operation will be in compliance with Section 219.204 of this Subpart on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date. The certification shall include:

   A) The name and identification number of each coating operation that will comply by means of Section 219.204(a)(1)(B),(a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) of this Subpart and the name and identification number of each coating line in each coating operation.

   B) The name and identification number of each coating as applied on each coating line in the coating operation.

   C) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.

   D) The transfer efficiency and control efficiency measured for each coating line.

   E) Test reports, including raw data and calculations documenting the testing performed to measure transfer efficiency and control efficiency.

   F) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each coating line.

   G) The method by which the owner or operator will create and maintain records each day as required in subsection (f)(2) of this Section.

   H) An example format for presenting the records required in subsection (f)(2) of this Section.

2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating operation shall collect and record all of the following information each day for each topcoat or primer surfacer coating operation and maintain the information at the source for a period of three years:

   A) All information necessary to demonstrate compliance with the topcoat protocol referenced in Section 219.105(b)(1)(B) and to calculate the daily-weighted average VOM emissions from the coating operations in kg/l (lbs/gal) of coating solids deposited in accordance with the proposal submitted, and approved pursuant to Section 219.204(a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) of this Subpart including:

i) The name and identification number of each coating as applied on each coating operation.

ii) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating operation.

B) If a control device or devices are used to control VOM emissions, control device monitoring data; a log of operating time for the capture system, control device, monitoring equipment and the associated coating operation; and 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.

3) On and after a date consistent with Section 219.106 of this Part or on and after the initial start-up date, the owner or operator of a subject coating operation shall determine and record the daily VOM emissions in kg/l (lbs/gal) of coating solids deposited in accordance with the proposal submitted and approved pursuant to Section 219.204 (a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) of this Subpart within 10 days from the end of the month and maintain this information at the source for a period of three years.

4) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating operation shall notify the Agency in the following instances:

A) Any record showing a violation of Section 219.204(a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) of this Subpart shall be reported by sending a copy of such record to the Agency within 15 days from the end of the month in which the violation occurred.

B) The owner or operator shall notify the Agency of any change to the operation at least 30 days before the change is effected. The Agency shall determine whether or not compliance testing is required. If the Agency determines that compliance testing is required, then the owner or operator shall submit a testing proposal to the Agency within 30 days and test within 30 days after the approval of the proposal by the Agency and USEPA.

g) On and after a date consistent with Section 219.106(c) of this Part, or on and after the initial start-up date, whichever is later, the owner or operator of a coating line subject to the requirements of Section 219.218 of this Subpart shall comply with the following:

1) By May 1, 2011, or upon initial start-up, whichever is later, submit a certification to the Agency that includes a description of the practices and procedures that the source will follow to ensure compliance with the applicable requirements in Section 219.218 of this Subpart;

2) Notify the Agency of any violation of Section 219.218 of this Subpart by providing a description of the violation and copies of records documenting the violation to the Agency within 30 days following the occurrence of the violation; and

3) Maintain at the source all records required by this subsection (g) for a minimum of three years from the date the document was created and make those records available to the Agency upon request.

h) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, whichever is later, the owner or operator of a coating line subject to the requirements of Section 219.219 of this Subpart shall comply with the following:

1) By May 1, 2012, or upon initial start-up, whichever is later, submit a certification to the Agency that includes:

A) A description of the practices and procedures that the source will follow to ensure compliance with the applicable requirements in Section 219.219 of this Subpart;

B) For sources subject to Section 219.219(a)(6), the work practices plan specified in that Section;

C) For sources subject to Section 219.219(b)(6), the application methods used to apply coatings on the subject coating line;

2) Notify the Agency of any violation of Section 219.219 of this Subpart by providing a description of the violation and copies of records documenting the violation to the Agency within 30 days following the occurrence of the violation; and

3) Maintain at the source all records required by this subsection (h) for a minimum of three years from the date the document was created and make those records available to the Agency upon request.

i) On and after a date consistent with Section 219.106(d) of this Part, or on and after the initial start-up date, whichever is later, the owner or operator of a flat wood paneling coating line subject to the requirements in Section 219.217 of this Subpart shall comply with the following:

1) By August 1, 2010, or upon initial start-up, whichever is later, submit a certification to the Agency that includes a description of the practices and procedures that the source will follow to ensure compliance with the applicable requirements in Section 219.217(c) and (d) of this Subpart; and

2) Notify the Agency of any violation of Section 219.217 of this Subpart by providing a description of the violation and copies of records documenting such violation to the Agency within 30 days following the occurrence of the violation.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.212 Cross-Line Averaging to Establish Compliance for Coating Lines

a) On and after March 15, 1996, any owner or operator of a coating line subject to the limitations set forth in Section 219.204 of this Subpart, except coating lines subject to the limitations in Section 219.204(a)(2), (c)(2), (g)(2), (h)(2), (o) or (q) of this Subpart, and with coating lines in operation prior to January 1, 1991 (pre-existing coating lines), may, for pre-existing coating lines only, elect to comply with the requirements of this Section, rather than complying with the applicable emission limitations set forth in Section 219.204, if an operational change of the type described below has been made after January 1, 1991, to one or more pre-existing coating lines at the source. An operational change occurs when a pre-existing coating line is replaced with a line using lower VOM coating for the same purpose as the replaced line (replacement line). A source electing to rely on this Section to demonstrate compliance with the requirements of this Subpart shall operate pursuant to federally enforceable permit conditions approved by the Agency and USEPA.

b) An owner or operator of pre-existing coating lines subject to a VOM content limitation in Section 219.204 of this Subpart and electing to rely on this Section to demonstrate compliance with this Subpart must establish, by use of the equations in subsection (d) of this Section, that the calculated actual daily VOM emissions from all participating coating lines, as defined in this subsection, are less than the calculated daily allowable VOM emissions from the same group of coating lines. For any pre-existing coating line to be aggregated for the purposes of Section 219.212, 219.213, or 219.214 of this Subpart (participating coating lines), the source must establish that:

1) All coatings applied on the participating coating line shall, at all times, have a VOM content less than or equal to the applicable VOM content limitation for such coating listed in Appendix H of this Part; and

2) On the date the source elects to rely on this Section to demonstrate compliance with this Subpart, all coatings applied on the participating

coating line are not already in compliance with the VOM content limitation for such coating effective on or after March 15, 1996; or the participating coating line is a replacement line, as defined in subsection (a) of this Section with an operational change occurring on or after January 1, 1991.

c) Notwithstanding subsection (a) of this Section, any owner or operator of a coating line subject to the limitations set forth in Section 219.204 of this Subpart and electing to rely on this Section to demonstrate compliance with this Subpart, may also include as a participating coating line, until December 31, 1999, only, any replacement line that satisfies all of the following conditions:

1) The replacement line is operated as a powder coating line;

2) The replacement line was added after July 1, 1988; and

3) The owner or operator also includes as a participating coating line one or more coating lines that satisfy the criteria of a replacement line, as described in subsection (a) of this Section.

d) To demonstrate compliance with this Section, a source shall establish the following:

1) An alternative daily emission limitation shall be determined for all participating coating lines at the source according to subsection (d)(2) of this Section. All participating coating lines shall be factored in each day to demonstrate compliance. Provided compliance is established pursuant to the requirements in this subsection, nothing in this Section requires daily operation of each participating line. Actual daily emissions from all participating coating lines (E_d) shall never exceed the alternative daily emission limitation (A_d) and shall be calculated by use of the following equation:

$$E_d = \sum_{i=1}^{n} V_i C_i$$

where:

E_d = Actual daily VOM emissions from participating coating lines in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of coatings applied by all participating coating lines at the source;

V_i = Volume of each coating applied for the day in units of l/day (gal/day) of coating (minus water and any compounds that are specifically exempted from the definition of VOM); and

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM).

2) The alternative daily emission limitation (A_d) shall be determined for all participating coating lines at the source on a daily basis as follows:

$$A_d = A_i + A_p$$

where A_i and A_p are defined in subsections (d)(2)(A) and (d)(2)(B) of this Section.

A) The portion of the alternative daily emissions limitation for coating operations at a source using non-powder coating (A_i) shall be determined for all such participating non-powder coating lines on a daily basis as follows:

$$A_i = \sum_{i=1}^{n} V_i L_i \frac{(D_i - C_i)}{(D_i - L_i)}$$

where:

A_i = The VOM emissions allowed for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of coatings applied by all participating coating lines at the source;

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM);

D_i = The density of VOM in each coating applied. For the purposes of calculating A_i, the density is 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_i = Volume of each coating applied for the day in units of l (gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM); and

L_i = The VOM emission limitation for each coating applied, as specified in Section 219.204 of this Subpart, in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM).

B) The portion of the alternative daily emission limitation for coating operations at a source using powdered coating (A_p) shall be determined for all such participating powder coating lines at the source on a daily basis as follows:

$$A_p = \sum_{h=1}^{m} \sum_{j=1}^{n} \frac{V_j L_j D_j K_h}{\left(D_j - L_j\right)}$$

where:

A_p = The VOM emissions allowed for the day in units of kg/day (lbs/day);

h = Subscript denoting a specific powder coating line;

j = Subscript denoting a specific powder coating applied;

m = Total number of participating powder coating lines;

n = Total number of powder coatings applied in the participating coating lines;

D_j = The assumed density of VOM in liquid coating, 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_j = Volume of each powder coating consumed for the day in units of l (gal) of coating;

L_j = The VOM emission limitation for each coating applied, as specified in Section 219.204 of this Subpart, in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds that are specifically exempted from the definition of VOM); and

K = A constant for each individual coating line representing the ratio of the volume of coating solids consumed on the liquid coating system that has been replaced to the volume of powder coating consumed on the replacement line to accomplish the same coating job. This value shall be determined by the source based on tests conducted and records maintained pursuant to the requirements of Section 219.213 of this Subpart demonstrating the amount of coating solids consumed as both liquid and powder. Tests methods and recordkeeping requirements shall be approved by the Agency and USEPA and contained in the source's operating permit as federally enforceable permit conditions, subject to the following restrictions:

i) K cannot exceed 0.9 for non-recycled powder coating systems; or

ii) K cannot exceed 2.0 for recycled powder coating systems.

(Source: Amended at 34 Ill. Reg. 14326, effective September 14, 2010)

Section 219.213 Recordkeeping and Reporting for Cross-Line Averaging Participating Coating Lines

Any owner or operator of a coating line that elects to comply by means of Section 219.212 of this Subpart shall establish the following:

a) By the date consistent with Section 219.210(f) of this Subpart, or upon initial start-up of a new coating line replacing a pre-existing coating line, as defined in Section 219.212 of this Subpart, or upon changing the method of compliance for a pre-existing coating line from the requirements of Section 219.204 or Section 219.207 of this Subpart to the requirements of Section 219.212 of this Subpart, the owner or operator of the source shall certify to the Agency that each participating coating line, as determined in Section 219.212 of this Subpart, will be in compliance with Section 219.212 of this Subpart on and after a date consistent with Section 219.210(f) of this Subpart, or on and after the initial start-up date of such participating coating lines. Such certification shall also include:

1) The name and identification number of each participating coating line;

2) The name and identification number of each coating as applied on each participating coating line;

3) The weight of VOM per volume of each coating and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each participating coating line;

4) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each participating coating line;

5) The method by which the owner or operator will create and maintain records each day as required in subsection (b) of this Section;

6) An example of the format in which the records required in subsection (b) of this Section will be kept;

7) A statement that all coatings used on participating coating lines have a VOM content less than or equal to the applicable VOM limitation for such coating set forth in Appendix H of this Part, and that all lines either:

A) Underwent a change in operations incorporating a lower VOM coating on each applicable participating coating line after the date of January 1, 1991; or

B) Are not in compliance and continued compliance with the coating limitations in Section 219.204 of this Subpart, compliance with which is required on or after March 15, 1996.

8) The method by which the owner or operator has calculated K, for the equation contained in Section 219.212(d)(2)(B) of this Subpart, if applicable.

b) On and after a date consistent with Section 219.210(f) of this Subpart, or on and after the initial start-up date, the owner or operator of a source electing to comply with the requirements of this Subpart by means of Section 219.212 of this Subpart shall collect and record the following information on a daily basis for each participating coating line and maintain the information at the source for a period of three years:

1) The name and identification number of each coating as applied on each participating coating line;

2) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied on each participating coating line on a daily basis; and

3) The daily weighted average VOM content of all coatings as applied on each coating line as defined at 35 Ill. Adm. Code 211.1230.

c) On and after a date consistent with Section 219.210(f) of this Subpart, the owner or operator of participating coating lines shall:

1) Notify the Agency within 30 days following an occurrence of a violation of Section 219.212 of this Subpart; and

2) Send to the Agency any record showing a violation of Section 219.212 of this Subpart within 30 days following the occurrence of a violation.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.214 Changing Compliance Methods

a) At least 30 calendar days before changing the method of compliance with this Subpart from Section 219.212 of this Subpart to Section 219.204 or Section 219.207 of this Subpart, the owner or operator of a source relying on Section 219.212 to demonstrate compliance with this Subpart for one or more pre-existing coating lines shall comply with all requirements of Section 219.211 (c)(1) or (e)(1) of this Subpart, respectively.

b) Upon changing the method of compliance with this Subpart from Section 219.212 to Section 219.204 or Section 219.207 of this Subpart, the owner or operator of a source shall comply with the requirements of Section 219.211(c) or (e) of this Subpart, respectively.

c) The owner or operator shall certify that all remaining participating coating lines, if any, comply and continue to comply with the requirements of Section 219.212 of this Subpart.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.215 Wood Furniture Coating Averaging Approach

a) On and after March 15, 1998, any owner or operator of a source subject to the limitations of Section 219.204(l) of this Subpart may elect to comply with the requirements of this Section rather than complying with the applicable emission limitations set forth in Section 219.204(l)(2)(A) or (B) of this Subpart. The source must continue to comply with the limitations set forth in Sections 219.204(l)(3) and (4) of this Subpart. A source electing to rely on this Section to demonstrate compliance with the requirements of this Subpart shall operate pursuant to federally enforceable permit conditions approved by the Agency and USEPA.

b) An owner or operator of a source subject to the limitations of Section 219.204(l) of this Subpart and electing to rely on this Section to demonstrate compliance with this Subpart must establish, by use of subsection (b)(1) or (b)(2) of this Section, that, on a daily basis, actual emissions from the affected source are less than or equal to ninety percent of the allowable emissions, that is $V_a \leq V_p$:

1) Option I:

A) $V_a = \sum_{i=1}^{n} \left(ER_{TC_i} \times TC_i \right)$; and

B) $$V_p = 0.9 \times \sum_{i=1}^{n} \left(0.8 \times TC_i \right)$$

2) Option II:

A) $$V_a = \sum_{i=1}^{n} \Big[\left(ER_{TC_i} \times TC_i \right) + \left(ER_{SE_i} \times SE_i \right) + \left(ER_{WC_i} \times WC_i \right) + \left(ER_{PC_i} \times PC_i \right) + \left(ER_{ST_i} \times ST_i \right) \Big]; and$$

B) $$V_p = 0.9 \times \sum_{i=1}^{n} \Big[\left(1.8 \times TC_i \right) + \left(1.9 \times SE_i \right) + \left(9.0 \times WC_i \right) + \left(1.2 \times PC_i \right) + \left(0.791 \times ST_i \right) \Big]$$

where:

V_a = Actual VOM emissions from the source;

V_p = 90% of the allowable VOM emissions from the source;

n = Number of different wood furniture coatings as applied each day on each coating line;

i = Subscript denoting an individual coating;

TC_i = kilograms of solids in topcoat “i” used;

SE_i = kilograms of solids in sealer “i” used;

WC_i = kilograms of solids in wash coat “i” used;

PC_i = kilograms of solids in non-topcoat pigmented coat “i” used;

ST_i = liters of stain “i” used;

ER_{TCi} = VOM content of topcoat “i” in kg VOM/kg solids, as applied;

ER_{SEi} = VOM content of sealer “i” in kg VOM/kg solids, as applied;

ER_{WCi} = VOM content of washcoat “i” in kg VOM/kg solids, as applied;

ER_{PCi} = VOM content of non-topcoat pigmented coat “i” in kg VOM/kg solids, as applied;

ER_{STi} = VOM content of stain “i” in kg VOM/liter (kg/l), as applied;

c) Within the structure of the source’s federally enforceable permit conditions, an owner or operator of a source electing to rely on this Section to demonstrate compliance with this Subpart shall provide to the Agency:

1) The name and identification number of each participating coating line;

2) The name and identification number of each coating as applied on each participating coating line;

3) A summary of how averaging will be used to meet the emission limitations;

4) Documentation that $V_a \leq V_p$, as calculated in subsection (b)(1) or (2) of this Section;

5) A description of which types of coating materials will be included in the source's averaging program, which may include stains, basecoats, washcoats, sealers, and topcoats. Coating materials that are applied using continuous coaters may be used in an averaging program only if the source can determine the amount of coating used each day;

6) A description of methods and procedures for quantifying emissions on a daily basis, including methods to determine the VOM content of each coating and the daily usage of each coating; and

7) A summary of the monitoring, recordkeeping, and reporting procedures that will be used to demonstrate daily compliance with the inequalities in subsections (b)(1) and (2) of this Section. These procedures shall be structured such that the Agency and the owner or operator of the source can determine the source's compliance status for any given day.

d) On and after March 15, 1998, or on and after the initial start-up date, the owner or operator of a source electing to rely on this Section to comply with the requirements of this Subpart shall, for each coating line relying on this Section, collect and record the following information on a daily basis and maintain the information at the source for a period of three years:

1) The name and identification number of each coating as applied on the coating line;

2) The weight of VOM per weight of solids (kg VOM/kg solids) and the weight of solids (kg) of each coating as applied on each coating line on a daily basis;

3) Certified product data sheets for each finishing material; and

4) The calculations showing the source has met the conditions of the inequalities in subsection (b)(1) or (2) of this Section.

e) On and after March 15, 1998, or on and after the initial start-up date, the owner or operator of a source electing to rely on this Section to comply with the requirements of this Subpart shall:

1) Notify the Agency within 30 calendar days following an occurrence of a violation of this Section; and

2) Send to the Agency any record showing a violation of this Section within 30 calendar days following the occurrence of a violation.

f) At least 30 calendar days before changing the method of compliance with this Subpart from reliance on this Section to reliance on Section 219.204(l)(2)(A) or (B) of this Subpart, the owner or operator of a source relying on this Section to demonstrate compliance with this Subpart for one or more wood furniture coating lines shall:

1) Comply with all requirements of Section 219.211(c)(1) of this Subpart; and

2) Certify that all remaining coating lines relying on this Section to comply with the requirements of this Subpart, if any, comply and continue to comply with the requirements of this Section.

(Source: Added at 22 Ill. Reg. 3517, effective February 2, 1998)

Section 219.216 Wood Furniture Coating Add-On Control Use

The owner or operator of a source subject to the requirements of Section 219.204(l)(2) of this Subpart may choose to comply with those limitations by relying on Section 219.204(l)(2)(D) of this Subpart if the owner or operator of the source meets all of the following requirements:

a) For each coating applied, determine the overall control efficiency needed to demonstrate compliance using the following equation:

$$R = \left[\frac{(C - L)}{C} \right] \times 100$$

where:

R = the necessary overall capture and control efficiency of the control system, as a percentage;

C = the VOM content of the coating, in kilograms of VOM per kilograms of coating solids (kg VOM/kg solids), as applied;

L = the emission limitation for that coating, as given in Section 219.204(l)(2)(B) of this Subpart.

b) Calculate the equivalent overall capture and control efficiency of the control device using the procedures of subsections 219.105(c), (d), and (e) of this Part.

c) Demonstrate that the equivalent overall capture and control efficiency calculated using the procedures in subsections 219.105(c), (d), and (e) of this Part is equal to or greater than the largest value of R calculated for each coating by the equation in subsection (a) of this Section.

d) Install, calibrate, operate, and maintain the applicable monitoring equipment for the control device as specified in Section 219.105(d) of this Part.

e) On and after March 15, 1998, or on and after the initial start-up date, the owner or operator of a source electing to rely on this Section to comply with the requirements of this Subpart shall, for each coating line relying on this Section, collect and record the following information on a daily basis and maintain the information at the source for a period of three years:

1) The name and identification number of each coating as applied on the coating line;

2) The weight of VOM per weight of solids (kg VOM/kg solids) of each coating as applied on each coating line on a daily basis;

3) Certified product data sheets for each coating;

4) Control device monitoring data;

5) A log of operating time for the capture system, control device, monitoring equipment and the associated coating line; and

6) 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.

f) On and after March 15, 1998, or on and after the initial start-up date, the owner or operator of a source electing to rely on this Section to comply with the requirements of this Subpart shall:

1) Notify the Agency within 30 calendar days following an occurrence of a violation of this Section; and

2) Send to the Agency any record showing a violation of this Section within 30 calendar days following the occurrence of a violation.

g) At least 30 calendar days before changing the method of compliance with this Subpart from reliance on this Section to reliance on Section 219.204(l)(2)(A) or (B) of this Subpart, the owner or operator of a source relying on this Section to demonstrate compliance with this Subpart for one or more wood furniture coating lines shall:

1) Comply with all requirements of Section 219.211(c)(1) of this Subpart; and

2) Certify that all remaining coating lines relying on this Section to comply with the requirements of this Subpart, if any, comply and continue to comply with the requirements of this Section.

(Source: Added at 22 Ill. Reg. 3517, effective February 2, 1998)

Section 219.217 Wood Furniture Coating and Flat Wood Paneling Coating Work Practice Standards

a) Spray booth cleaning. Each owner or operator of a source subject to the limitations of Section 219.204(l) of this Subpart shall not use compounds containing more than 8.0 percent, by weight, of VOM for cleaning spray booth components other than conveyors, continuous coaters and their enclosures, and metal filters, unless the spray booth is being refurbished. If the spray booth is being refurbished, that is, the spray booth coating or other material used to cover the booth is being replaced, the affected source shall use no more than 1.0 gallon of organic solvent to prepare the booth prior to applying the booth coating.

b) Application equipment requirements. No owner or operator of a source subject to the limitations of Section 219.204(l) of this Subpart shall use conventional air spray guns to apply coating materials to wood furniture except under the circumstances specified in subsections (b)(1) through (4) of this Section:

1) To apply coating materials that have a VOM content no greater than 1.0 kg VOM/kg solids (1.0 lb VOM/lb solids), as applied;

2) For repair coating under the following circumstances:

A) The coating materials are applied after the completion of the coating operation; or

B) The coating materials are applied after the stain and before any other type of coating material is applied, and the coating materials are applied from a container that has a volume of no more than 2.0 gallons;

3) If the spray gun is aimed and triggered automatically, rather than manually; or

4) If emissions from the finishing application station are directed to a control device pursuant to Section 219.216 of this Subpart.

c) Cleaning and storage requirements. Each owner or operator of a source subject to the limitations of Section 219.204(l) or (o) of this Subpart shall:

1) Keep, store, and dispose of all coating, cleaning, and washoff materials in

closed containers;

2) Pump or drain all organic solvent used for line cleaning into closed containers;

3) Collect all organic solvent used to clean spray guns in closed containers; and

4) Control emissions from washoff operations by using closed tanks.

d) Additional cleaning and storage requirements for flat wood paneling coating lines. Every owner or operator of a source subject to the limitations of Section 219.204(o) of this Subpart shall:

1) Minimize spills of VOM-containing coatings, thinners, and cleaning materials and clean up spills immediately;

2) Minimize emissions of VOM during the cleaning of storage, mixing, and conveying equipment; and

3) Keep mixing vessels that contain VOM-containing coatings and other VOM-containing materials closed except when specifically in use.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.218 Work Practice Standards for Paper Coatings, Metal Furniture Coatings, and Large Appliance Coatings

a) On and after May 1, 2011, every owner or operator of a source subject to the requirements of Section 219.204(c) of this Subpart shall:

1) Store all VOM-containing cleaning materials in closed containers;

2) Ensure that mixing and storage containers used for VOM-containing materials are kept closed at all times except when depositing or removing those materials;

3) Minimize spills of VOM-containing cleaning materials;

4) Convey VOM-containing cleaning materials from one location to another in closed containers or pipes; and

5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment.

b) On and after May 1, 2011, every owner or operator of a source subject to the requirements of Section 219.204(g) or 219.204(h) of this Subpart shall:

1) Store all VOM-containing coatings, thinners, coating-related waste materials, cleaning materials, and used shop towels in closed containers;

2) Ensure that mixing and storage containers used for VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials are kept closed at all times except when depositing or removing those materials;

3) Minimize spills of VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials, and clean up spills immediately;

4) Convey VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials from one location to another in closed containers or pipes;

5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment; and

6) Apply all coatings using one or more of the following application methods:

A) Electrostatic spray;

B) High volume low pressure (HVLP) spray;

C) Flow coating. For the purposes of this subsection (b), flow coating means a non-atomized technique of applying coating to a substrate with a fluid nozzle with no air supplied to the nozzle;

D) Roll coating;

E) Dip coating, including electrodeposition. For purposes of this subsection (b), electrodeposition means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created;

F) Brush coating, if subject to the requirements of Section 219.204(h); or

G) Another coating application method capable of achieving a transfer efficiency equal to or better than that achieved by HVLP spraying, if such method is approved in writing by the Agency.

(Source: Added at 34 Ill. Reg. 5330, effective March 23, 2010)

Section 219.219 Work Practice Standards for Automobile and Light-Duty Truck Assembly Coatings and Miscellaneous Metal and Plastic Parts Coatings

a) Every owner or operator of a coating line subject to the requirements of Section 219.204(a)(2) of this Subpart shall:

1) Store all VOM-containing coatings, thinners, coating-related waste materials, cleaning materials, and used shop towels in closed containers;

2) Ensure that mixing and storage containers used for VOM-containing coatings, thinners, and coating-related waste materials are kept closed at all times except when depositing or removing those materials;

3) Minimize spills of VOM-containing coatings, thinners, and coating-related waste materials;

4) Convey VOM-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes;

5) Minimize VOM emissions from cleaning of storage, mixing, and conveying equipment;

6) Develop and implement a work practice plan to minimize VOM emissions from cleaning and from purging of equipment associated with coating lines subject to the limitations in Section 219.204(a)(2). The plan shall specify practices and procedures that the source will follow to ensure that VOM emissions from the operations listed in this subsection (a)(6) are minimized. If the owner or operator of the subject coating line has already implemented a work practice plan for the coating line pursuant to Subpart IIII of 40 CFR 63, incorporated by reference in Section 219.112 of this Part, the owner or operator may revise the plan as necessary to comply with this Section.

A) Vehicle body wiping;

B) Coating line purging;

C) Flushing of coating systems;

D) Cleaning of spray booth grates, walls, and equipment; and

F) Cleaning of external spray booth areas.

b) Except as provided in subsection (c) of this Section, every owner or operator of a coating line described in Section 219.204(q) of this Subpart shall:

1) Store all VOM-containing coatings, thinners, coating-related waste materials, cleaning materials, and used shop towels in closed containers;

2) Ensure that mixing and storage containers used for VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials are kept closed at all times except when depositing or removing these materials;

3) Minimize spills of VOM-containing coatings, thinners, coating-related

waste materials, and cleaning materials;

4) Convey VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials from one location to another in closed containers or pipes;

5) Minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers; and

6) Apply all coatings using one or more of the following application methods:

A) Electrostatic spray;

B) High volume low pressure (HVLP) spray;

C) Flow coating. For the purposes of this subsection (b)(6)(C), flow coating means a non-atomized technique of applying coating to a substrate with a fluid nozzle with no air supplied to the nozzle;

D) Roll coating;

E) Dip coating, including electrodeposition. For purposes of this subsection (b)(6)(E), electrodeposition means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created;

F) Airless spray;

G) Air-assisted airless spray; or

H) Another coating application method capable of achieving a transfer efficiency equal to or better than that achieved by HVLP spraying, if the method is approved in writing by the Agency.

c) Notwithstanding subsection (b) of this Section, the application method limitations in subsection (b)(6) shall not apply to the following:

1) Coating lines complying with Section 219.207(m)(1);

2) For metal parts and products coating operations: touch-up coatings, repair coatings, textured finishes, stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, magnetic data storage disk coatings, and plastic extruded onto metal parts to form a coating;

3) For pleasure craft surface coating operations: extreme high gloss coatings;

4) For plastic parts and products coating operations: airbrush operations using 18.9 liters (5 gallons) or less of coating per year.

5) For ammunition sealant operations: cap sealants and mouth waterproofing sealants.

(Source: Added at 34 Ill. Reg. 14326, effective September 14, 2010)

SUBPART G: USE OF ORGANIC MATERIAL

Section 219.301 Use of Organic Material

No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission unit, except as provided in Sections 219.302, 219.303, 219.304 of this Part and the following exception: If no odor nuisance exists the limitation of this Subpart shall apply only to photochemically reactive material.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.302 Alternative Standard

Emissions of organic material in excess of those permitted by Section 219.301 of this Part are allowable if such emissions are controlled by one of the following methods:

a) Flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water; or,

b) A vapor recovery system which adsorbs and/or condenses at least 85 percent of the total uncontrolled organic material that would otherwise be emitted to the atmosphere; or,

c) Any other air pollution control equipment approved by the Agency and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.303 Fuel Combustion Emission Units

The provisions of Sections 219.301 and 219.302 of this Part shall not apply to fuel combustion emission units.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.304 Operations with Compliance Program

The provisions of Sections 219.301 and 219.302 of this Part shall not apply to any owner, operator, user or manufacturer of paint, varnish, lacquer, coatings or printing ink whose compliance program and project completion schedule, as required by 35 Ill. Adm. Code 201, provided for the reduction of organic material used in such process to 20 percent or less of total volume by May 30, 1977.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART H: PRINTING AND PUBLISHING

Section 219.401 Flexographic and Rotogravure Printing

a) No owner or operator of a subject flexographic or rotogravure printing line shall apply at any time any coating or ink unless the VOM content does not exceed the limitation specified in either subsection (a)(1) or (a)(2), as applicable. Compliance with this Section must be demonstrated through the applicable coating or ink analysis test methods and procedures specified in Section 219.105(a) and the recordkeeping and reporting requirements specified in Section 219.404(c) of this Part. As an alternative to compliance with this subsection, a subject printing line may meet the requirements of subsection (b) or (c).

  1) Prior to August 1, 2010, either:

    A) Forty percent VOM by volume of the coating and ink (minus water and any compounds which are specifically exempted from the definition of VOM); or

    B) Twenty-five percent VOM by volume of the volatile content in the coating and ink; and

  2) On and after August 1, 2010:

    A) For owners or operators of flexographic or rotogravure printing lines that do not print flexible packaging, either:

      i) Forty percent VOM by volume of the coating and ink (minus water and any compounds that are specifically exempted from the definition of VOM); or

      ii) Twenty-five percent VOM by volume of the volatile content in the coating and ink;

    B) For owners or operators of flexographic or rotogravure printing lines that print flexible packaging, or that print flexible packaging and non-flexible packaging on the same line, either:

i) 0.8 kg VOM/kg (0.8 lbs VOM/lb) solids applied; or

ii) 0.16 kg VOM/kg (0.16 lbs VOM/lb) inks and coatings applied.

b) Weighted Averaging Alternative

1) Prior to August 1, 2010, no owner or operator of a subject flexographic or rotogravure printing line shall apply coatings or inks on the subject printing line unless the weighted average, by volume. VOM content of all coatings and inks as applied each day on the subject printing line does not exceed the limitation specified in either subsection (a)(1)(A) (as determined by subsection (b)(1)(A)) or subsection (a)(1)(B) (as determined by subsection (b)(1)(B) of this Section). Compliance with this subsection must be demonstrated through the applicable coating or ink analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.404(d) of this Part.

A) The following equation shall be used to determine if the weighted average VOM content of all coatings and inks as applied each day on the subject printing line exceeds the limitation specified in subsection (a)(1)(A) of this Section.

$$VOM_{(i)(A)} = \frac{\sum_{i=1}^{n} C_i L_i (V_{si} + V_{VOMi})}{\sum_{i=1}^{n} L_i (V_{si} + V_{VOMi})}$$

where:

$VOM_{(i)(A)}$ = The weighted average VOM content in units of percent VOM by volume of all coatings and inks (minus water and any compounds that are specifically exempted from the definition of VOM) used each day;

i = Subscript denoting a specific coating or ink as applied;

n = The number of different coatings and/or inks as applied each day on a printing line;

C_i = The VOM content in units of percent VOM by volume of each coating or ink as applied (minus water and any compounds that are specifically exempted from the definition of VOM);

L_i = The liquid volume of each coating or ink as applied in units of l (gal);

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

V_{VOMi} = The volume fraction of VOM in each coating or ink as applied.

B) The following equation shall be used to determine if the weighted average VOM content of all coatings and inks as applied each day on the subject printing line exceeds the limitation specified in subsection (a)(1)(B) of this Section.

$$VOM_{(i)(B)} = \frac{\sum_{i=1}^{n} C_i L_i V_{VMi}}{\sum_{i=1}^{n} L_i V_{VMi}}$$

where:

$VOM_{(i)(B)}$ = The weighted average VOM content in units of percent VOM 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 and/or inks as applied each day on a printing line;

C_i = The VOM content in units of percent VOM by volume of the volatile matter in each coating or ink as applied;

L_i = The liquid volume of each coating or ink as applied in units of l (gal);

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

2) On and after August 1, 2010, no owner or operator of a subject flexographic or rotogravure printing line that does not print flexible packaging shall apply coatings or inks on the subject printing line unless the weighted average, by weight, VOM content of all coatings and inks as applied each day on the subject printing line does not exceed the limitation specified in either subsection (a)(2)(A)(i) (calculated in accordance with the equation in subsection (b)(1)(A)) or (a)(2)(A)(ii) (calculated in

accordance with the equation in subsection (b)(1)(B)) of this Section. Compliance with this subsection (b)(2) shall be demonstrated through the applicable coating or ink analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.404(d) of this Subpart.

3) On and after August 1, 2010, no owner or operator of a subject flexographic or rotogravure printing line that prints flexible packaging, or that prints flexible packaging and non-flexible packaging on the same line, shall apply coatings or inks on the subject printing line unless the weighted average, by weight, VOM content of all coatings and inks as applied each day on the subject printing line does not exceed the limitation specified in either subsection (a)(2)(B)(i) (calculated in accordance with the equation in subsection (b)(3)(A)) or subsection (a)(2)(B)(ii) (calculated in accordance with the equation in subsection (b)(3)(B)) of this Section. Compliance with this subsection (b)(3) shall be demonstrated through the applicable coating or ink analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.404(d) of this Subpart.

A) The following equation shall be used to determine if the weighted average VOM content of all coatings and inks as applied each day on the subject printing line exceeds the limitation specified in subsection (a)(2)(B)(i) of this Section.

$$VOM_{(A)} = \frac{\sum_{i=1}^{n} C_i W_i}{\sum_{i=1}^{n} W_i}$$

where:

$VOM_{(A)}$ = The weighted average VOM content in units of kg VOM per kg (lbs VOM per lb) solids of all coatings and inks used each day;

i = Subscript denoting a specific coating or ink as applied;

n = The number of different coatings and/or inks as applied each day on a printing line;

C_i = The VOM content in units of kg VOM per kg (lbs VOM per lb) solids of each coating or ink as applied;

W_i = Weight of solids in each coating or ink, as applied, in units of kg (lb).

B) The following equation shall be used to determine if the weighted average VOM content of all coatings and inks as applied each day on the subject printing line exceeds the limitation specified in subsection (a)(2)(B)(ii) of this Section.

$$VOM_{(B)} = \frac{\sum_{i=1}^{n} C_i L_i}{\sum_{i=1}^{n} L_i}$$

where:

$VOM_{(B)}$ = The weighted average VOM content in units of kg (lbs) VOM per weight in kg (lbs) of all coatings or inks as applied each day;

i = Subscript denoting a specific coating or ink as applied;

n = The number of different coatings and/or inks as applied each day on each printing line;

C_i = The VOM content in units of kg (lbs) VOM per weight in kg (lbs) of each coating or ink as applied;

L_i = The weight of each coating or ink, as applied, in units of kg (lb).

c) Capture System and Control Device Requirements

1) Prior to August 1, 2010, no owner or operator of a subject flexographic or rotogravure printing line equipped with a capture system and control device shall operate the subject printing line unless the owner or operator meets the requirements in subsection (c)(1)(A)(i), (c)(1)(A)(ii), or (c)(1)(A)(iii), as well as subsections (c)(1)(B), (c)(5), and (c)(6).

A) One of:

i) A carbon adsorption system is used that reduces the captured VOM emissions by at least 90 percent by weight; or

ii) An incineration system is used that reduces the captured VOM emissions by at least 90 percent by weight; or

iii) An alternative VOM emission reduction system is used that is demonstrated to have at least a 90 percent control device efficiency, approved by the Agency and approved by USEPA as a SIP revision; and

B) The printing line is equipped with a capture system and control device that provides an overall reduction in VOM emissions of at least:

i) 75 percent where a publication rotogravure printing line is employed; or

ii) 65 percent where a packaging rotogravure printing line is employed; or

iii) 60 percent where a flexographic printing line is employed;

2) On and after August 1, 2010, no owner or operator of a flexographic or rotogravure printing line that does not print flexible packaging and that is equipped with a capture system and control device shall operate the subject printing line unless the owner or operator meets the requirements in subsection (c)(1)(A)(i), (c)(1)(A)(ii), or (c)(1)(A)(iii), as well as subsections (c)(1)(B), (c)(5), and (c)(6) of this Section;

3) On and after August 1, 2010, no owner or operator of a flexographic or rotogravure printing line that prints flexible packaging and that is equipped with a capture system and control device shall operate the subject printing line unless the owner or operator meets the requirements in subsections (c)(5) and (c)(6) of this Section and the capture system and control device provides an overall reduction in VOM emissions of at least:

A) 65 percent in cases in which a subject printing line was first constructed at the subject source prior to March 14, 1995 and utilizes a control device that was first constructed at the subject source prior to January 1, 2010; or

B) 70 percent when a subject printing line was first constructed at the subject source prior to March 14, 1995 and utilizes a control device that was first constructed at the subject source on or after January 1, 2010; or

C) 75 percent when a subject printing line was first constructed at the subject source on or after March 14, 1995 and utilizes a control device that was first constructed at the subject source prior to January 1, 2010; or

D) 80 percent when a subject printing line was first constructed at the subject source on or after March 14, 1995 and utilizes a control device that was first constructed at the subject source on or after

January 1, 2010;

4) On and after August 1, 2010, the owner or operator of a flexographic or rotogravure printing line that prints flexible packaging and non-flexible packaging on the same line and that is equipped with a control device shall be subject to the requirements of either subsection (c)(1)(B) or (c)(3) of this Section, whichever is more stringent, as well as subsections (c)(5) and (c)(6) of this Section;

5) The control device is equipped with the applicable monitoring equipment specified in Section 219.105(d)(2) of this Part and, except as provided in Section 219.105(d)(3) of this Part, the monitoring equipment is installed, calibrated, operated and maintained according to vendor specifications at all times the control device is in use; and

6) The capture system and control device are operated at all times when the subject printing line is in operation. The owner or operator shall demonstrate compliance with this subsection by using the applicable capture system and control device test methods and procedures specified in Section 219.105(c) of this Part through Section 219.105(f) of this Part and by complying with the recordkeeping and reporting requirements specified in Section 219.404(e) of this Part. The owner or operator of a printing line subject to the requirements in subsection (c)(1)(B) or (c)(2) of this Section that performed all testing necessary to demonstrate compliance with subsection (c)(1)(B) prior to August 1, 2010, is not required to retest pursuant to this subsection (c)(6). The owner or operator of a printing line subject to the requirements in subsection (c)(3) shall perform testing in compliance with this subsection (c)(6), even if the owner or operator already performed such testing prior to August 1, 2010, unless the following conditions are met. Nothing in this subsection (c)(6), however, shall limit the Agency's ability to require that the owner or operator perform testing pursuant to 35 Ill. Adm. Code 201.282:

A) On or after May 1, 2000, the owner or operator of the subject printing line performed all testing necessary to demonstrate compliance with subsection (c)(1)(B);

B) Such testing also demonstrated an overall control efficiency equal to or greater than the applicable control efficiency requirements in subsection (c)(3);

C) The owner or operator submitted the results of such tests to the Agency, and the tests were not rejected by the Agency;

D) The same capture system and control device subject to the tests referenced in subsection (c)(6)(A) of this Section is still being used by the subject printing line; and

E) The owner or operator complies with all recordkeeping and reporting requirements in Section 219.404(e)(1)(B).

d) No owner or operator of subject flexographic or rotogravure printing lines that print flexible packaging or print flexible packaging and non-flexible packaging on the same line shall cause or allow VOM containing cleaning materials, including used cleaning towels, associated with the subject flexographic or rotogravure printing lines to be kept, stored, or disposed of in any manner other than in closed containers, or conveyed from one location to another in any manner other than in closed containers or pipes, except when specifically in use.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.402 Applicability

a) Except as otherwise provided in Section 219.401, the limitations of Section 219.401 of this Subpart apply to all flexographic and rotogravure printing lines at a subject source. All sources with flexographic and/or rotogravure printing lines are subject sources unless:

1) Total maximum theoretical emissions of VOM from all flexographic and rotogravure printing lines (including solvents used for cleanup operations associated with flexographic and rotogravure printing lines), at the source never exceed 90.7 Mg (100 tons) per calendar year before the application of capture systems and control devices, or

2) A federally enforceable permit or SIP revision for all flexographic and rotogravure printing lines at a source requires the owner or operator to limit production or capacity of these printing lines to reduce total VOM emissions from all flexographic and rotogravure printing lines to 90.7 Mg (100 tons) or less per calendar year before the application of capture systems and control devices.

b) The limitations of Section 219.401(d) shall apply to all owners or operators of flexographic or rotogravure printing lines that print flexible packaging, or that print flexible packaging and non-flexible packaging on the same line, at a source where the combined emissions of VOM from all flexographic and rotogravure printing lines total 6.8 kg/day (15 lbs/day) or more (including solvents used for cleanup operations associated with flexographic and rotogravure printing lines), in the absence of air pollution control equipment.

c) Upon achieving compliance with this Subpart, the flexographic and rotogravure printing lines are not required to meet Subpart G (Section 219.301 or 219.302 of this Part). Flexographic and rotogravure printing lines exempt from this Subpart are subject to Subpart G (Section 219.301 or 219.302 of this Part). Rotogravure or flexographic equipment used for both roll printing and paper coating is subject to this Subpart.

d) Once subject to the limitations of Section 219.401 of this Part, a flexographic or rotogravure printing line is always subject to the limitations of Section 219.401 of this Part.

e) Any owner or operator of any flexographic or rotogravure printing line that is exempt from any of the limitations of Section 219.401 of this Part because of the criteria in this Section is subject to the recordkeeping and reporting requirements specified in Section 219.404(b) and (f) of this Part, as applicable.

(Source: Amended at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.403 Compliance Schedule

Every owner or operator of a flexographic and/or rotogravure printing line shall comply with the applicable requirements of Section 219.401 and Section 219.404 of this Part in accordance with the applicable compliance schedule or schedules specified in subsection (a), (b), (c), (d), (e), (f) or (g):

a) No owner or operator of a flexographic or rotogravure printing line that is exempt from the limitations of Section 219.401 of this Part because of the criteria in Section 219.402(a) of this Part shall operate said printing line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.404(b) of this Part.

b) No owner or operator of a flexographic or rotogravure printing line complying by means of Section 219.401(a)(1) of this Part shall operate said printing line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.401(a)(1) of this Part and Section 219.404(c) of this Part.

c) No owner or operator of a flexographic or rotogravure printing line complying by means of Section 219.401(b)(1) of this Part shall operate said printing line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.401(b)(1) and Section 219.404(d) of this Part.

d) No owner or operator of a flexographic or rotogravure printing line complying by means of Section 219.401(c)(1)(B) of this Part shall operate said printing line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, the applicable provisions in Sections 219.401(c) and 219.404(e) of this Part.

e) No owner or operator of a flexographic or rotogravure printing line complying by means of Section 219.401(a)(2), (b)(2), or (b)(3) or complying by means of Section 219.401(c)(2), (c)(3), or (c)(4), shall operate the printing line on or after August 1, 2010, unless the owner or operator has complied with, and continues to comply with, Section 219.401(a)(2), (b)(2) or (b)(3), and Section 219.401(c), as applicable, and all applicable provisions in Section 219.404 of this Part.

f) No owner or operator of a flexographic or rotogravure printing line that prints flexible packaging, or that prints flexible packaging and non-flexible packaging on the same line, shall operate the printing line on or after August 1, 2010, unless the owner or operator has complied with, and continues to comply with, Section 219.401(d) and Section 219.404(g) of this Part.

g) No owner or operator of a flexographic or rotogravure printing line that prints flexible packaging, or that prints flexible packaging and non-flexible packaging on the same line, and that is exempt from the limitations of Section 219.401(d) because of the criteria in Section 219.402(b) of this Part shall operate the printing line on or after August 1, 2010, unless the owner or operator has complied with, and continues to comply with, Section 219.402(b) and Section 219.404(f) of this Part.

(Source: Amended at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.404 Recordkeeping and Reporting

a) The VOM 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 Section 219.105 of this Part to establish the records required under this Section.

b) Any owner or operator of a printing line which is exempted from any of the limitations of Section 219.401 of this Part because of the criteria in Section 219.402(a) of this Part shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or, for flexographic or rotogravure printing lines that print flexible packaging or that print flexible packaging and non-flexible packaging on the same line, by January 1, 2012, the owner or operator of a flexographic and rotogravure printing line to which this subsection (b) is applicable shall certify to the Agency that the flexographic and rotogravure printing line is exempt under the provisions of Section 219.402(a) of this Part. Such certification shall include:

A) A declaration that the flexographic and rotogravure printing line is exempt from the limitations of the criteria in Section 219.401 because of Section 219.402(a) of this Part; and

B) Calculations that demonstrate that total maximum theoretical emissions of VOM from all flexographic and rotogravure printing lines at the source never exceed 90.7 Mg (100 tons) per calendar year before the application of capture systems and control devices. Total maximum theoretical emissions of VOM for a flexographic or rotogravure printing source is the sum of maximum theoretical emissions of VOM from each flexographic and rotogravure printing line at the source. The following equation shall be used to calculate total maximum theoretical emissions of VOM per calendar year before the application of capture systems and control devices for each flexographic and rotogravure printing line at the source:

$$E_p = A \times B + 1095\left(C \times D \times F\right)$$

where:

E_p = Total maximum theoretical emissions of VOM from one flexographic or rotogravure printing line in units of kg/year (lbs/year);

A = Weight of VOM per volume of solids of the coating or ink with the highest VOM content as applied each year on the printing line in units of kg VOM/l (lbs VOM/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 line in units of 1/year (gal/year). The method by which the owner or operator accurately calculated the volume of each coating and ink as applied and the amount that can potentially be applied each year on the printing line shall be described in the certification to the Agency;

C = Weight of VOM per volume of material for the cleanup material or solvent with the highest VOM content as used each year on the printing line in units of kg/l (lbs VOM/gal) of such material;

D = The greatest volume of cleanup material or solvent used in any 8-hour period;

F = The highest fraction of cleanup material or solvent which is not recycled or recovered for offsite disposal during any 8-hour period.

2) On and after a date consistent with Section 219.106 of this Part, or, for flexographic or rotogravure printing lines that print flexible packaging or that print flexible packaging and non-flexible packaging on the same line, on and after January 1, 2012, the owner or operator of a facility referenced in this subsection shall collect and record all of the following information each year for each printing line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating and ink as applied on each printing line.

B) The VOM content and the volume of each coating and ink as applied each year on each printing line.

3) On and after a date consistent with Section 219.106 of this Part, or, for flexographic or rotogravure printing lines that print flexible packaging or that print flexible packaging and non-flexible packaging on the same line, on and after January 1, 2012, the owner or operator of a facility exempted from the limitations of Section 219.401 of this Part because of the criteria in Section 219.402(a) of this Part shall notify the Agency of any record showing that total maximum theoretical emissions of VOM from all printing lines exceed 90.7 Mg (100 tons) in any calendar year before the application of capture systems and control devices by sending a copy of such record to the Agency within 30 days after the exceedance occurs.

c) Any owner or operator of a printing line subject to the limitations of Section 219.401 of this Part and complying by means of Section 219.401(a) of this Part shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or upon initial start-up of a new printing line, or upon changing the method of compliance from an existing subject printing line from Section 219.401(b) or Section 219.401(c) to Section 219.401(a) of this Part, the owner or operator of a subject printing line shall certify to the Agency that the printing line will be in compliance with Section 219.401(a) of this Part on and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or on and after the initial start-up date. The owner or operator of a printing line subject to the requirements in Section 219.401(a)(2)(B) shall certify in accordance with this subsection (c)(1) even if the owner or operator of such line submitted a certification prior to January 1, 2010. Such certification shall include:

A) The name and identification number of each coating and ink as applied on each printing line.

B) The VOM content of each coating and ink as applied each day on each printing line.

2) On and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or on and after the initial start-up date, the owner or operator of a printing line subject to the limitations of Section 219.401 of this Part and complying by means of Section 219.401(a) of this Part shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating and ink as applied on each printing line.

B) The VOM content of each coating and ink as applied each day on each printing line.

3) On and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, the owner or operator of a subject printing line shall notify the Agency in the following instances:

A) Any record showing violation of Section 219.401(a) of this Part shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance with Section 219.401 of this Part from Section 219.401(a) to Section 219.401(b) or (c) of this Part, the owner or operator shall comply with all requirements of subsection (d)(1) or (e)(1) of this Section, respectively. Upon changing the method of compliance with Section 219.401 of this Part from Section 219.401(a) to Section 219.401(b) or (c) of this Part, the owner or operator shall comply with all requirements of subsection (d) or (e) of this Section, respectively.

d) Any owner or operator of a printing line subject to the limitations of Section 219.401 of this Part and complying by means of Section 219.401(b) of this Part shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or upon initial start-up of a new printing line, or upon changing the method of compliance for an existing subject printing line from Section 219.401(a) or (c) to Section 219.401(b) of this Part, the owner or operator of the subject printing line shall certify to the Agency that the printing line will be in compliance with Section 219.401(b) of this Part on and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, on and after the initial start-up date. The owner or operator of a printing line subject to the requirements in Section 219.401(b)(3) shall certify in accordance with this subsection (d)(1) even if the owner or operator of such line submitted a certification prior to January 1, 2010. Such certification shall include:

A) The name and identification number of each printing line which will comply by means of Section 219.401(b) of this Part.

B) The name and identification number of each coating and ink available for use on each printing line.

C) The VOM content of each coating and ink as applied each day on each printing line.

D) The method by which the owner or operator will accurately calculate the volume, or weight of solids, as applicable, of each coating and ink as applied each day on each printing line, and on and after January 1, 2012, the weight of each coating or ink.

E) The method by which the owner or operator will create and maintain records each day as required in subsection (d)(2) of this Section.

F) An example of the format in which the records required in subsection (d)(2) of this Section will be kept.

2) On and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or on and after the initial start-up date, the owner or operator of a printing line subject to the limitations of Section 219.401 and complying by means of Section 219.401(b) of this Part shall collect and record all of the following information each day for each printing line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating and ink as applied on each printing line.

B) The VOM content and the volume, or weight of solids, as applicable, of each coating and ink as applied each day on each printing line, and on and after January 1, 2012, the weight of each coating or ink.

C) The daily-weighted average VOM content of all coatings and inks as applied on each printing line.

3) On and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, the owner or operator of a subject printing line shall notify the Agency in the following instances:

A) Any record showing violation of Section 219.401(b) of this Part shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance with Section 219.401 of this Part from Section 219.401(b) to Section 219.401(a) or (c) of this Part, the owner or operator shall comply with all requirements of subsection (c)(1) or (e)(1) of this Section, respectively. Upon changing the method of compliance with Section 219.401 of this Part from Section 219.401(b) to Section 219.401(a) or (c) of this Part, the owner or operator shall comply with all requirements of subsection (c) or (e) of this Section, respectively.

e) Any owner or operator of a printing line subject to the limitations of Section 219.401 of this Part and complying by means of Section 219.401(c) of this Part shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or upon initial start-up of a new printing line, or upon changing the method of compliance for an existing printing line from Section 219.401(a) or (b) to Section 219.401(c) of this Part, the owner or operator of the subject printing line shall either:

A) Perform all tests and submit to the Agency the results of all tests and calculations necessary to demonstrate that the subject printing line will be in compliance with Section 219.401(c) of this Part on and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or on and after the initial start-up date; or

B) If not required to perform such testing pursuant to Section 219.401(c)(6), submit a certification to the Agency that includes:

i) A declaration that the owner or operator is not required to perform testing pursuant to Section 219.401(c)(6);

ii) The dates that testing demonstrating compliance with Section 219.401(c)(3) was performed; and

iii) The dates that the results of such testing were submitted to the Agency.

2) On and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, or on and after the initial start-up date, the owner or operator of a printing line subject to the limitations of Section 219.401 of this Part and complying by means of Section 219.401(c) of this Part shall collect and record all of the following information each day for each printing line and maintain the information at the facility for a period of three years:

A) Control device monitoring data.

B) A log of operating time for the capture system, control device, monitoring equipment and the associated printing line.

C) 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.

3) On and after a date consistent with Section 219.106 of this Part, or Section 219.403(e), as applicable, the owner or operator of a subject printing line

shall notify the Agency in the following instances:

A) Any record showing violation of Section 219.401(c) of this Part shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance with Section 219.401 of this Part from Section 219.401(c) to Section 219.401(a) or (b) of this Part, the owner or operator shall comply with all requirements of subsection (c)(1) or (d)(1) of this Section, respectively. Upon changing the method of compliance with Section 219.401 of this Part from Section 219.401(c) to Section 219.401(a) or (b) of this Part, the owner or operator shall comply with all requirements of subsection (c) or (d) of this Section, respectively.

4) By August 1, 2010, or upon initial start-up of a new printing line, whichever is later, the owner or operator of a printing line subject to the requirements in Section 219.401(c)(3) or (c)(4) shall submit to the Agency records documenting the date the printing line was constructed at the subject source and the date the control device for such printing line was constructed at the subject source.

f) Any owner or operator of a flexographic or rotogravure printing line that prints flexible packaging, or that prints flexible packaging and non-flexible packaging on the same line, and that is exempt from the limitations of Section 219.401(d) because of the criteria in Section 219.402(b) shall:

1) By August 1, 2010, or upon initial start-up of a new printing line, whichever is later, and upon modification of a printing line, submit a certification to the Agency that includes:

A) A declaration that the source is exempt from the requirements in Section 219.401(d) because of the criteria in Section 219.402(b);

B) Calculations that demonstrate that combined emissions of VOM from all flexographic and rotogravure printing lines (including inks and solvents used for cleanup operations associated with such printing lines) at the source never equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment;

2) On and after January 1, 2012, collect and record the following information each day for each subject printing line:

A) The name and identification number of each coating, ink, and cleaning solvent as applied each day on each printing line;

B) The VOM content of each coating and ink (measured in weight of

VOM per volume of coating or ink, or in weight of VOM per weight of coating or ink) as applied each day on each printing line, and the volume or weight of each coating or ink, as applicable;

C) The weight of VOM per volume of each cleaning solvent and the volume of each cleaning solvent used each day on each printing line;

D) The total daily emissions of VOM from each printing line (including solvents used for cleanup operations associated with the printing line) and the sum of daily emissions from all subject printing lines at the source; and

3) Notify the Agency in writing if the combined emissions of VOM from all flexographic and rotogravure printing lines (including inks and solvents used for cleanup operations associated with the flexographic and rotogravure lines) at the source ever equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment, within 30 days after the event occurs.

g) Any owner or operator of a printing line subject to the limitations of Section 219.401(d) shall:

1) By August 1, 2010, or upon initial start-up of a new printing line, whichever is later, submit a certification to the Agency describing the practices and procedures that the owner or operator will follow to ensure compliance with the limitations of Section 219.401(d); and

2) Notify the Agency of any violation of Section 219.401(d) by sending a description of the violation and copies of records documenting such violations to the Agency within 30 days following the occurrence of the violation.

h) All records required by subsections (f) and (g) of this Section shall be retained for at least three years and shall be made available to the Agency upon request.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.405 Lithographic Printing: Applicability

a) Every owner or operator of lithographic printing lines is subject to the recordkeeping and reporting requirements in Section 219.411 of this Subpart.

b) Prior to August 1, 2010, Sections 219.407 through 219.410 of this Subpart shall apply to:

1) All owners or operators of heatset web offset lithographic printing lines unless:

A) Total maximum theoretical emissions of VOM from all heatset web offset lithographic printing lines (including solvents used for cleanup operations associated with heatset web offset lithographic printing lines) at the source never exceed 90.7 Mg (100 tons) per calendar year before the application of capture systems and control devices. To determine a source's total maximum theoretical emissions of VOM for the purposes of this subsection (b)(1)(A), the owner or operator shall use the calculations set forth in Section 219.411(a)(1)(C) of this Subpart; or

B) Federally enforceable permit conditions or SIP revision for all heatset web offset lithographic printing lines at the source requires the owner or operator to limit production or capacity of these printing lines to total VOM emissions of 90.7 Mg/yr (100 TPY) or less, before the application of capture systems and control devices;

2) All owners or operators of lithographic printing lines, unless the combined emissions of VOM from all lithographic printing lines at the source (including solvents used for cleanup operations associated with the lithographic printing lines never exceed 45.5 kg/day (100 lbs/day), as determined in accordance with Section 219.411(a)(1)(B), before the application of capture systems and control devices.

c) On and after August 1, 2010:

1) The requirements in Section 219.407(a)(1)(B) through (a)(1)(E) and 219.407(b) and all applicable provisions in Sections 219.409 through 219.411 of this Subpart shall apply to all owners or operators of heatset web offset lithographic printing lines, if the combined emissions of VOM from all lithographic printing lines at the source (including solvents used for cleanup operations associated with the lithographic printing lines) ever exceed 45.5 kg/day (100 lbs/day), calculated in accordance with Section 219.411(b)(2)(B), before the application of capture systems and control devices;

2) The requirements in Section 219.407(a)(1)(A) and (a)(2) through (a)(5) and all applicable provisions in Sections 219.409 through 219.411 of this Subpart shall apply to all owners or operators of lithographic printing lines if the combined emissions of VOM from all lithographic printing lines at the source (including solvents used for cleanup operations associated with the lithographic printing lines) ever equal or exceed 6.8 kg/day (15 lbs/day), calculated in accordance with Section 219.411(b)(1)(B), before the application of capture systems and control devices;

3) Notwithstanding subsection (c)(2) of this Section, at sources where the combined emissions of VOM from all lithographic printing lines at the source (including solvents used for cleanup operations associated with the lithographic printing lines) equal or exceed 6.8 kg/day (15 lbs/day) but do

not exceed 45.5 kg/day (100 lbs/day), calculated in accordance with Section 219.411(b)(1)(B), before the application of capture systems and control devices, the following exclusions shall apply unless the owner or operator of the source certifies pursuant to Section 219.411(g)(1)(B) that the source will not make use of any such exclusions:

A) The requirements of Section 219.407(a)(1)(A), (a)(2), and (a)(3) of this Subpart shall not apply to lithographic printing lines with a total fountain solution reservoir of less than 3.8 liters (1 gallon);

B) The requirements of Section 219.407(a)(3) of this Subpart shall not apply to sheet-fed offset lithographic printing lines with maximum sheet size of 11x17 inches or smaller;

C) The requirements of Section 219.407(a)(4) of this Subpart shall not apply to up to a total of 416.3 liters (110 gallons) per year of cleaning materials used on all lithographic printing lines at the source;

D) The requirements of Section 219.407(a)(4)(A)(i) shall not apply to lithographic printing lines at the source. Instead, the requirements of Section 219.407(a)(4)(A)(ii) shall apply to such lines.

d) If a lithographic printing line at a source is or becomes subject to one or more of the limitations in Section 219.407 of this Subpart, the lithographic printing lines at the source are always subject to the applicable provisions of this Subpart.

(Source: Amended at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.407 Emission Limitations and Control Requirements for Lithographic Printing Lines

a) No owner or operator of lithographic printing lines subject to the requirements of this Subpart shall:

1) Cause or allow the operation of any heatset web offset lithographic printing line unless:

A) The total VOM content in the as-applied fountain solution meets one of the following conditions:

i) 1.6 percent or less, by weight;

ii) 3 percent or less, by weight, and the temperature of the fountain solution is maintained below 15.6°C (60°F), measured at the reservoir or the fountain tray; or

iii) 5 percent or less, by weight, and the as-applied fountain solution contains no alcohol;

B) The air pressure in the dryer is maintained lower than the air pressure of the press room, such that air flow through all openings in the dryer, other than the exhaust, is into the dryer at all times when the printing line is operating;

C) An afterburner is installed and operated so that VOM emissions (excluding methane and ethane) from the press dryer exhausts are reduced as follows:

i) Prior to August 1, 2010, by 90 percent, by weight, or to a maximum afterburner exhaust outlet concentration of 20 ppmv (as carbon); and

ii) On and after August 1, 2010, by at least 90 percent, by weight, for afterburners first constructed at the source prior to January 1, 2010; by at least 95 percent, by weight, for afterburners first constructed at the source on or after January 1, 2010; or to a maximum afterburner exhaust outlet concentration of 20 ppmv (as carbon);

D) The afterburner complies with all monitoring provisions specified in Section 219.410(c) of this Subpart; and

E) The afterburner is operated at all times when the printing line is in operation, except the afterburner may be shut down between November 1 and April 1 as provided in Section 219.107 of this Part;

2) Cause or allow the operation of any non-heatset web offset lithographic printing line unless the VOM content of the as-applied fountain solution is 5 percent or less, by weight, and the as-applied fountain solution contains no alcohol;

3) Cause or allow the operation of any sheet-fed offset lithographic printing line unless:

A) The VOM content of the as-applied fountain solution is 5 percent or less, by weight; or

B) The VOM content of the as-applied fountain solution is 8.5 percent or less, by weight, and the temperature of the fountain solution is maintained below 15.6°C (60°F), measured at the reservoir or the fountain tray;

4) Cause or allow the use of a cleaning solution on any lithographic printing line unless:

A) The VOM content of the as-used cleaning solution is less than or equal to:

i) 30 percent, by weight; or

ii) On and after August 1, 2010, for owners or operators of sources that meet the applicability criteria in Section 219.405(c)(3) and do not certify pursuant to Section 219.411(g)(1)(B) that the source will not make use of any of the exclusions in Section 219.405(c)(3), 70 percent, by weight; or

B) The VOM composite partial vapor pressure of the as-used cleaning solution is less than 10 mmHg at 20°C (68°F);

5) Cause or allow VOM containing cleaning materials, including used cleaning towels, associated with any lithographic printing line to be kept, stored or disposed of in any manner other than in closed containers, except when specifically in use.

b) An owner or operator of a heatset web offset lithographic printing line subject to the requirements of Section 219.407(a)(1)(C) of this Subpart may use a control device other than an afterburner, if:

1) The control device reduces VOM emissions from the press dryer exhausts as follows:

A) Prior to August 1, 2010, by at least 90 percent, by weight, or to a maximum control device exhaust outlet concentration of 20 ppmv (as carbon); and

B) On and after August 1, 2010:

i) By at least 90 percent, by weight, for control devices first constructed at the source prior to January 1, 2010;

ii) By at least 95 percent, by weight, for control devices first constructed at the source on or after January 1, 2010; or

iii) To a maximum control device exhaust outlet concentration of 20 ppmv (as carbon);

2) The owner or operator submits a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for the control device; and

3) The use of the control device with testing, monitoring, and recordkeeping

in accordance with this plan is approved by the Agency and USEPA as federally enforceable permit conditions.

(Source: Amended at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.409 Testing for Lithographic Printing

a) Testing to demonstrate compliance with the requirements of Section 219.407 of this Subpart shall be conducted by January 1, 2012, unless such testing was conducted on or after May 9, 1995, the test was conducted pursuant to a test method approved by USEPA, the current operating conditions and operating capacity of the press are consistent with the operation of the press during such testing, and the test results were submitted to the Agency. If an owner or operator of a printing line performed such testing prior to May 9, 1995, the owner or operator shall either retest pursuant to this Section or submit to the Agency all information necessary to demonstrate that the prior testing was conducted pursuant to a test method approved by USEPA, and that the current operating conditions and operating capacity of the press are consistent with the operation of the press during prior testing. Thereafter, testing shall be conducted by the owner or operator within 90 days after a request by the Agency, or as otherwise specified in this Subpart. Such testing shall be conducted at the expense of the owner or operator and the owner or operator shall notify the Agency in writing 30 days in advance of conducting such testing to allow the Agency to be present during such testing.

b) The methods and procedures of Section 219.105(d) and (f) shall be used for testing to demonstrate compliance with the requirements of Section 219.407(a)(1)(C) or (b)(1) of this Subpart, as follows:

1) To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, appendix A, incorporated by reference at Section 219.112 of this Part. The sampling sites for determining efficiency in reducing VOM from the dryer exhaust shall be located between the dryer exhaust and the control device inlet, and between the outlet of the control device and the exhaust to the atmosphere;

2) To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, appendix A, incorporated by reference at Section 219.112 of this Part;

3) To determine the VOM concentration of the exhaust stream entering and exiting the control device, Method 25 or 25A, as appropriate, 40 CFR 60, appendix A, incorporated by reference at Section 219.112 of this Part. For thermal and catalytic afterburners, Method 25 must be used except under the following circumstances, in which case Method 25A must be used:

A) The allowable outlet concentration of VOM from the control device is less than 50 ppmv, as carbon;

B) The VOM concentration at the inlet of the control device and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon; and

C) Due to the high efficiency of the control device, the anticipated VOM concentration at the control device exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest shall be conducted using either Method 25 or Method 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest using Method 25;

4) Notwithstanding the criteria or requirements in Method 25 that specifies a minimum probe temperature of 129ºC (265ºF), the probe must be heated to at least the gas stream temperature of the dryer exhaust, typically close to 176.7ºC (350ºF);

5) During testing, the printing lines shall be operated at representative operating conditions and flow rates; and

6) During testing, an air flow direction indicating device, such as a smoke stick, shall be used to demonstrate 100 percent emissions capture efficiency for the dryer in accordance with Section 219.407(a)(1)(B) of this Subpart.

c) Testing to demonstrate compliance with the VOM content limitations in Section 219.407(a)(1)(A), (a)(2), (a)(3) and (a)(4)(A) of this Subpart, and to determine the VOM content of fountain solutions, fountain solution additives, cleaning solvents, cleaning solutions, and inks (pursuant to the requirements of Section 219.411(a)(1)(B), (b)(1)(B), or (b)(2)(B) of this Subpart, as applicable), shall be conducted upon request of the Agency or as otherwise specified in this Subpart, as follows:

1) The applicable test methods and procedures specified in Section 219.105(a) of this Part shall be used; provided, however, Method 24, incorporated by reference at Section 219.112 of this Part, shall be used to demonstrate compliance; or

2) The manufacturer's specifications for VOM content for fountain solution additives, cleaning solvents, and inks may be used if such manufacturer's

specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part; provided, however, Method 24 shall be used to determine compliance.

d) Testing to demonstrate compliance with the requirements of Section 219.407(b) of this Subpart shall be conducted as set forth in the owner or operator's plan approved by the Agency and USEPA as federally enforceable permit conditions pursuant to Section 219.407(b) of this Subpart.

e) Testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning solvent concentrates, and as-used cleaning solutions shall be conducted in accordance with the applicable methods and procedures specified in Section 219.110 of this Part.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.410 Monitoring Requirements for Lithographic Printing

a) Fountain Solution Temperature

1) The owner or operator of any lithographic printing lines relying on the temperature of the fountain solution to demonstrate compliance shall install, maintain, and continuously operate a temperature monitor of the fountain solution in the reservoir or fountain tray, as applicable.

2) The temperature monitor must be capable of reading with an accuracy of 1°C or 2°F, and must be attached to an automatic, continuous recording device such as a strip chart, recorder, or computer, with at least the same accuracy, that is installed, calibrated and maintained in accordance with the manufacturer's specifications. If the automatic, continuous recording device malfunctions, the owner or operator shall record the temperature of the fountain solution at least once every two operating hours. The automatic, continuous recording device shall be repaired or replaced as soon as practicable.

b) Fountain Solution VOM Content. The owner or operator of any lithographic printing lines subject to Section 219.407(a)(1)(A), (a)(2) or (a)(3) of this Subpart shall:

1) For a fountain solution to which VOM is not added automatically:

A) Maintain records of the VOM content of the fountain solution in accordance with Section 219.411(e)(2)(C); or

B) Take a sample of the as-applied fountain solution from the fountain tray or reservoir, as applicable, each time a fresh batch of fountain solution is prepared or each time VOM is added to an existing batch of fountain solution in the fountain tray or reservoir, and shall determine compliance with the VOM content limitation of the as-applied fountain solution by using one of the following options:

i) With a refractometer or hydrometer with a visual, analog, or digital readout and with an accuracy of 0.5 percent. The refractometer or hydrometer must be calibrated with a standard solution for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications, against measurements performed to determine compliance. The refractometer or hydrometer must be corrected for temperature at least once per 8-hour shift or once per batch of fountain solution prepared or modified, whichever is longer; or

ii) With a conductivity meter if it is demonstrated that a refractometer and hydrometer cannot distinguish between compliant and noncompliant fountain solution for the type and amount of VOM in the fountain solution. A source may use a conductivity meter if it demonstrates that both hydrometers and refractometers fail to provide significantly different measurements for standard solutions containing 95 percent, 100 percent and 105 percent of the applicable VOM content limit. The conductivity meter reading for the fountain solution must be referenced to the conductivity of the incoming water. A standard solution shall be used to calibrate the conductivity meter for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications;

2) For fountain solutions to which VOM is added at the source with automatic feed equipment, determine the VOM content of the as-applied fountain solution based on the setting of the automatic feed equipment which makes additions of VOM up to a pre-set level. Records must be retained of the VOM content of the fountain solution in accordance with Section 219.411(e)(2)(D) of this Subpart. The equipment used to make automatic additions must be installed, calibrated, operated and maintained in accordance with manufacturer's specifications.

c) Afterburners for Heatset Web Offset Lithographic Printing Lines.
If an afterburner is used to demonstrate compliance, the owner or operator of a heatset web offset lithographic printing line subject to Section 219.407(a)(1)(C) of this Subpart shall:

1) Install, calibrate, maintain, and operate temperature monitoring devices with an accuracy of 3°C or 5F° on the afterburner in accordance with Section 219.105(d)(2) of this Part and in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the afterburner is operating; and

2) Install, calibrate, operate and maintain, in accordance with manufacturer's

specifications, a continuous recorder on the temperature monitoring devices, such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor.

d) Other Control Devices for Heatset Web Offset Lithographic Printing Lines. If a control device other than an afterburner is used to demonstrate compliance, the owner or operator of a heatset web offset lithographic printing line subject to this Subpart shall install, maintain, calibrate and operate such monitoring equipment as set forth in the owner or operator's plan approved by the Agency and USEPA pursuant to Section 219.407(b) of this Subpart.

e) Cleaning Solution

1) The owner or operator of any lithographic printing line relying on the VOM content of the cleaning solution to comply with Section 219.407(a)(4)(A) of this Subpart must:

A) For cleaning solutions that are prepared at the source with equipment that automatically mixes cleaning solvent and water (or other non-VOM):

i) Install, operate, maintain, and calibrate the automatic feed equipment in accordance with manufacturer's specifications to regulate the volume of each of the cleaning solvent and water (or other non-VOM), as mixed; and

ii) Pre-set the automatic feed equipment so that the consumption rates of the cleaning solvent and water (or other non-VOM), as applied, comply with Section 219.407(a)(4)(A) of this Subpart;

B) For cleaning solutions that are not prepared at the source with automatic feed equipment, keep records of the usage of cleaning solvent and water (or other non-VOM) as set forth in Section 219.411(f)(2) of this Subpart.

2) The owner or operator of any lithographic printing line relying on the vapor pressure of the cleaning solution to comply with Section 219.407(a)(4)(B) of this Subpart must keep records for such cleaning solutions used on any such lines as set forth in Section 219.411(f)(2)(C) of this Subpart.

(Source: Amended at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.411 Recordkeeping and Reporting for Lithographic Printing

a) Exempt Units prior to August 1, 2010. An owner or operator of lithographic printing lines exempt from the limitations of Section 219.407 of this Subpart prior to August 1, 2010, because of the criteria in Section 219.405(b) of this Subpart, shall comply with the following:

1) Upon initial start-up of a new lithographic printing line, and upon modification of a lithographic printing line, submit a certification to the Agency that includes:

   A) A declaration that the source is exempt from the control requirements in Section 219.407 of this Part because of the criteria in Section 219.405(b) of this Subpart;

   B) Calculations that demonstrate that combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source never exceed 45.5 kg/day (100 lbs/day) before the use of capture systems and control devices, as follows:

      i) To calculate daily emissions of VOM, the owner or operator shall determine the monthly emissions of VOM from all lithographic printing lines at the source (including solvents used for cleanup operations associated with the lithographic printing lines) and divide this amount by the number of days during that calendar month that lithographic printing lines at the source were in operation;

      ii) To determine the VOM content of the inks, fountain solution additives and cleaning solvents, the tests methods and procedures set forth in Section 219.409(c) of this Subpart shall be used;

      iii) To determine VOM emissions from inks used on lithographic printing lines at the source, an ink emission adjustment factor of 0.05 shall be used in calculating emissions from all non-heatset inks except when using an impervious substrate, and a factor of 0.80 shall be used in calculating emissions from all heatset inks to account for VOM retention in the substrate except when using an impervious substrate. For impervious substrates such as metal or plastic, no emission adjustment factor is used. The VOM content of the ink, as used, shall be multiplied by this factor to determine the amount of VOM emissions from the use of ink on the printing lines; and

      iv) To determine VOM emissions from fountain solutions and cleaning solvents used on lithographic printing lines at the source, no retention factor is used;

C) Either a declaration that the source, through federally enforceable permit conditions, has limited its maximum theoretical emissions of VOM from all heatset web offset lithographic printing lines (including solvents used for cleanup operations associated with heatset web offset printing lines) at the source to no more than 90.7 Mg (100 tons) per calendar year before the application of capture systems and control devices or calculations which demonstrate that the source's total maximum theoretical emissions of VOM do not exceed 90.7 Mg/yr (100 tons/yr). Total maximum theoretical emissions of VOM for a heatset web offset lithographic printing source is the sum of maximum theoretical emissions of VOM from each heatset web offset lithographic printing line at the source. The following equation shall be used to calculate total maximum theoretical emissions of VOM per calendar year in the absence of air pollution control equipment for each heatset web offset lithographic printing line at the source:

$$E_p = \left(R \times A \times B\right) + \left(C \times D\right) + 1095\ (F \times G \times H)$$

where:

E_d = Total maximum theoretical emissions of VOM from one heatset web offset printing line in units of kg/yr (lb/yr);

A = Weight of VOM per volume of solids of ink with the highest VOM content as applied each year on the printing line in units of kg/l (lb/gal) of solids;

B = Total volume of solids for all inks that can potentially be applied each year on the printing line in units of 1/yr (gal/yr). The method by which the owner or operator accurately calculated the volume of each ink as applied and the amount that can potentially be applied each year on the printing line shall be described in the certification to the Agency;

C = Weight of VOM per volume of fountain solution with the highest VOM content as applied each year on the printing line in units of kg/l (lb/gal);

D = The total volume of fountain solution that can potentially be used each year on the printing line in units of 1/yr (gal/yr). The method by which the owner or operator accurately calculated the volume of each fountain solution used and the amount that can potentially be used each year on the printing line shall be described in the certification to the Agency;

F = Weight of VOM per volume of material for the cleanup material or solvent with the highest VOM content as used each year on the printing line in units of kg/l (lb/gal) of such material;

G = The greatest volume of cleanup material or solvent used in any 8-hour period;

H = The highest fraction of cleanup material or solvent that is not recycled or recovered for offsite disposal during any 8-hour period;

R = The multiplier representing the amount of VOM not retained in the substrate being used. For paper, R = 0.8. For metal, plastic, or other impervious substrates, R = 1.0;

D) A description and the results of all tests used to determine the VOM content of inks, fountain solution additives, and cleaning solvents, and a declaration that all such tests have been properly conducted in accordance with Section 219.409(c)(1) of this Subpart;

2) Notify the Agency in writing if the combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source ever exceed 45.5 kg/day (100 lbs/day), before the use of capture systems and control devices, within 30 days after the event occurs. Such notification shall include a copy of all records of such event.

b) Exempt Units on and after August 1, 2010

1) Lithographic Printing Lines Exempt pursuant to Section 219.405(c)(2). By August 1, 2010, or upon initial start-up of a new lithographic printing line, whichever is later, and upon modification of a lithographic printing line, an owner or operator of lithographic printing lines exempt from the limitations in Section 219.407 of this Subpart because of the criteria in Section 219.405(c)(2) of this Subpart shall submit a certification to the Agency that includes the information specified in either subsections (b)(1)(A), (b)(1)(B), and (b)(1)(D) of this Section, or subsections (b)(1)(A) and (b)(1)(C) of this Section, as applicable. An owner or operator complying with subsection (b)(1)(B) shall also comply with the requirements in subsection (b)(1)(E) of this Section. An owner or operator complying with subsection (b)(1)(C) shall also comply with the requirements in subsection (b)(1)(F) of this Section:

A) A declaration that the source is exempt from the requirements in

Section 219.407 of this Subpart because of the criteria in Section 219.405(c)(2) of this Subpart;

B) Calculations that demonstrate that combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source do not equal or exceed 6.8 kg/day (15 lbs/day), before the use of capture systems and control devices, as follows:

i) To calculate daily emissions of VOM, the owner or operator shall determine the monthly emissions of VOM from all lithographic printing lines at the source (including solvents used for cleanup operations associated with the lithographic printing lines) and divide this amount by the number of days during that calendar month that lithographic printing lines at the source were in operation;

ii) To determine the VOM content of the inks, fountain solution additives and cleaning solvents, the test methods and procedures set forth in Section 219.409(c) of this Subpart shall be used;

iii) To determine VOM emissions from inks used on lithographic printing lines at the source, an ink emission adjustment factor of 0.05 shall be used in calculating emissions from all non-heatset inks except when using an impervious substrate, and a factor of 0.80 shall be used in calculating emissions from all heatset inks to account for VOM retention in the substrate except when using an impervious substrate. For impervious substrates such as metal or plastic, no emission adjustment factor is used. The VOM content of the ink, as used, shall be multiplied by this factor to determine the amount of VOM emissions from the use of ink on the printing lines; and

iv) To determine VOM emissions from cleaning solutions used on lithographic printing lines at the source, an emission adjustment factor of 0.50 shall be used in calculating emissions from used shop towels if the VOM composite vapor pressure of each associated cleaning solution is demonstrated to be less than 10 mmHg measured at 20°C (68°F) and the shop towels are kept in closed containers. For cleaning solutions with VOM composite vapor pressures of equal to or greater than 10 mmHg measured at 20°C (68°F) and for shop towels that are not kept in closed containers, no emission adjustment factor is used;

C) As an alternative to the calculations in subsection (b)(1)(B), a statement that the source uses less than the amount of material specified in subsection (b)(1)(C)(i) or (ii), as applicable, during each calendar month. A source may determine that it emits below 6.8 kg/day (15 lbs/day) of VOM based upon compliance with such material use limitations. If the source exceeds this amount of material use in a given calendar month, the owner or operator must, within 15 days after the end of that month, complete the emissions calculations of subsection (b)(1)(B) to determine daily emissions for applicability purposes. If the source ever exceeds this amount of material use for six consecutive calendar months, it is no longer eligible to use this subsection (b)(1)(C) as an alternative to the calculations in subsection (b)(1)(B). If a source has both heatset web offset and either nonheatset web offset or sheetfed lithographic printing operations, or has all three types of printing operations, the owner or operator may not make use of this alternative and must use the calculations in subsection (b)(1)(B).

i) The sum of all sheetfed and nonheatset web offset lithographic printing operations at the source: 242.3liters (64 gallons) of cleaning solvent and fountain solution additives, combined; or

ii) The sum of all heatset web offset lithographic printing operations at the source: 204.1 kg (450 lbs) of ink, cleaning solvent, and fountain solution additives, combined;

D) A description and the results of all tests used to determine the VOM content of inks, fountain solution additives, and cleaning solvents, and a declaration that all such tests have been properly conducted in accordance with Section 219.409(c)(1) of this Subpart;

E) For sources complying with subsection (b)(1)(B) of this Section, notify the Agency in writing if the combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source ever equal or exceed 6.8 kg/day (15 lbs/day), before the use of capture systems and control devices, within 30 days after the event occurs. If such emissions of VOM at the source equal or exceed 6.8 kg/day (15 lbs/day) but do not exceed 45.5 kg/day (100 lbs/day), the source shall comply with the requirements in subsection (b)(2) of this Section;

F) For sources complying with subsection (b)(1)(C) of this Section, comply with the following:

i) Maintain material use records showing that the source uses less than the amount of material specified in subsections (b)(1)(C)(i) and (b)(1)(C)(ii) during each calendar month, or, if the source exceeds the material use limitations, records showing that the source exceeded the limitations but did not emit 6.8 kg/day (15 lbs/day) or more of VOM, and provide such records to the Agency upon request. On and after January 1, 2012, such records shall include the name, identification number, and VOM content of each cleaning solvent and fountain solution additive used per calendar month, the volume of each cleaning solvent and fountain solution additive used per calendar month for each sheetfed and nonheatset web offset lithographic printing operation, and the weight of each cleaning solvent, ink, and fountain solution additive used per calendar month for each heatset web offset lithographic printing operation;

ii) Notify the Agency in writing if the source exceeds the material use limitations for six consecutive calendar months, or if the source changes its method of compliance from subsection (b)(1)(C) to subsection (b)(1)(B) of this Section, within 30 days after the event occurs;

2) Heatset web offset lithographic printing lines exempt pursuant to Section 219.405(c)(1) but not exempt pursuant to Section 219.405(c)(2). By August 1, 2010, or upon initial start-up of a new heatset web offset lithographic printing line, whichever is later, and upon modification of a heatset web offset lithographic printing line, an owner or operator of heatset web offset lithographic printing lines that are exempt from the limitations in Section 219.407 of this Subpart pursuant to the criteria in Section 219.405(c)(1) of this Subpart, but that are not exempt pursuant to the criteria in Section 219.405(c)(2) of this Subpart, shall submit a certification to the Agency that includes the information specified in subsections (b)(2)(A) through (b)(2)(C) of this Section. Such owner or operator shall also comply with the requirements in subsection (b)(2)(D) of this Section:

A) A declaration that the source is exempt from the control requirements in Section 219.407 of this Subpart because of the criteria in Section 219.405(c)(1) of this Subpart, but is not exempt pursuant to the criteria in Section 219.405(c)(2) of this Subpart;

B) Calculations that demonstrate that combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source never exceed 45.5 kg/day (100 lbs/day) before the use of capture systems and control devices, as follows (the following methodology shall also be used to calculate whether a source exceeds 45.5 kg/day (100 lbs/day) for purposes of determining eligibility for the exclusions set forth in Section 219.405(c)(3), in accordance with Section 219.411(g)(2)(A)(i)):

i) To calculate daily emissions of VOM, the owner or operator shall determine the monthly emissions of VOM from all lithographic printing lines at the source (including solvents used for cleanup operations associated with the lithographic printing lines) and divide this amount by the number of days during that calendar month that lithographic printing lines at the source were in operation;

ii) To determine the VOM content of the inks, fountain solution additives and cleaning solvents, the test methods and procedures set forth in Section 219.409(c) of this Subpart shall be used;

iii) To determine VOM emissions from inks used on lithographic printing lines at the source, an ink emission adjustment factor of 0.05 shall be used in calculating emissions from all non-heatset inks except when using an impervious substrate, and a factor of 0.80 shall be used in calculating emissions from all heatset inks to account for VOM retention in the substrate except when using an impervious substrate. For impervious substrates such as metal or plastic, no emission adjustment factor is used. The VOM content of the ink, as used, shall be multiplied by this factor to determine the amount of VOM emissions from the use of ink on the printing lines;

iv) To determine VOM emissions from cleaning solvents used on lithographic printing lines at the source, an emission adjustment factor of 0.50 shall be used in calculating emissions from cleaning solution in shop towels if the VOM composite vapor pressure of such cleaning solution is demonstrated to be less than 10 mmHg measured at 20ºC (68ºF) and the shop towels are kept in closed containers. For cleaning solutions with VOM composite vapor pressures of equal to or greater than 10 mmHg measured at 20ºC (68ºF) and for shop towels that are not kept in closed containers, no emission adjustment factor is used;

C) A description and the results of all tests used to determine the VOM content of inks, fountain solution additives, and cleaning solvents, and a declaration that all such tests have been properly conducted in accordance with Section 219.409(c)(1) of this Subpart;

D) Notify the Agency in writing if the combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source ever exceed 45.5 kg/day (100 lbs/day), before the use of capture systems and control devices, within 30 days after the event occurs.

c) Unless complying with subsections (b)(1)(C) and (b)(1)(F) of this Section, an owner or operator of lithographic printing lines subject to the requirements of subsection (a) or (b) of this Section shall collect and record either the information specified in subsection (c)(1) or (c)(2) of this Section for all lithographic printing lines at the source:

1) Standard recordkeeping, including the following:

A) The name and identification of each fountain solution additive, lithographic ink, and cleaning solvent used on any lithographic printing line, recorded each month;

B) A daily record which shows whether a lithographic printing line at the source was in operation on that day;

C) The VOM content and the volume of each fountain solution additive, lithographic ink, and cleaning solvent used on any lithographic printing line, recorded each month;

D) The total VOM emissions at the source each month, determined as the sum of the product of usage and VOM content for each fountain solution additive, cleaning solvent, and lithographic ink (with the applicable ink VOM emission adjustment) used at the source, calculated each month; and

E) The VOM emissions in lbs/day for the month, calculated in accordance with subsection (a)(1)(B), (b)(1)(B), or (b)(2)(B) of this Section, as applicable;

2) Purchase and inventory recordkeeping, including the following:

A) The name, identification, and VOM content of each fountain solution additive, lithographic ink, and cleaning solvent used on any lithographic printing line, recorded each month;

B) Inventory records from the beginning and end of each month indicating the total volume of each fountain solution additive, lithographic ink, and cleaning solvent to be used on any lithographic printing line at the source;

C) Monthly purchase records for each fountain solution additive, lithographic ink, and cleaning solvent used on any lithographic printing line at the source;

D) A daily record which shows whether a lithographic printing line at the source was in operation on that day;

E) The total VOM emissions at the source each month, determined as the sum of the product of usage and VOM content for each fountain solution additive, cleaning solvent, and lithographic ink (with the applicable ink VOM emission adjustment) used at the source, calculated each month based on the monthly inventory and purchase records required to be maintained pursuant to subsections (c)(2)(A), (c)(2)(B), and (c)(2)(C) of this Section;

F) The VOM emissions in lbs/day for the month, calculated in accordance with subsection (a)(1)(B), (b)(1)(B), or (b)(2)(B) of this Section, as applicable.

d) An owner or operator of a heatset web offset lithographic printing line subject to the control requirements of Section 219.407(a)(1)(C) or (b)(1) of this Subpart shall comply with the following:

1) By August 1, 2010, upon initial start-up of a new printing line, and upon initial start-up of a new control device for a heatset web offset printing line, submit a certification to the Agency that includes the following:

A) An identification of each heatset web offset lithographic printing line at the source;

B) A declaration that each heatset web offset lithographic printing line is in compliance with the requirements of Section 219.407 (a)(1)(B), (a)(1)(C), (a)(1)(D) and (a)(1)(E) or (b) of this Subpart, as appropriate;

C) The type of afterburner or other approved control device used to comply with the requirements of Section 219.407(a)(1)(C) or (b)(1) of this Subpart and the date that such device was first constructed at the source;

D) The control requirements in Section 219.407(a)(1)(C) or (b)(1) of this Subpart with which the lithographic printing line is complying;

E) The results of all tests and calculations necessary to demonstrate compliance with the control requirements of Section 219.407(a)(1)(C) or (b)(1) of this Subpart, as applicable; and

F) A declaration that the monitoring equipment required under

Section 219.407(a)(1)(D) or (b) of this Subpart, as applicable, has been properly installed and calibrated according to manufacturer's specifications;

2) If testing of the afterburner or other approved control device is conducted pursuant to Section 219.409(b) of this Subpart, the owner or operator shall, within 90 days after conducting such testing, submit a copy of all test results to the Agency and shall submit a certification to the Agency that includes the following:

A) A declaration that all tests and calculations necessary to demonstrate whether the lithographic printing lines are in compliance with Section 219.407(a)(1)(C) or (b)(1) of this Subpart, as applicable, have been properly performed;

B) A statement whether the lithographic printing lines are or are not in compliance with Section 219.407(a)(1)(C) or (b)(1) of this Subpart, as applicable; and

C) The operating parameters of the afterburner or other approved control device during testing, as monitored in accordance with Section 219.410(c) or (d) of this Subpart, as applicable;

3) Except as provided in subsection (d)(3)(D)(ii) of this Section, collect and record daily the following information for each heatset web offset lithographic printing line subject to the requirements of Section 219.407(a)(1)(C) or (b)(1) of this Subpart:

A) Afterburner or other approved control device monitoring data in accordance with Section 219.410(c) or (d) of this Subpart, as applicable;

B) A log of operating time for the afterburner or other approved control device, monitoring equipment, and the associated printing line;

C) A maintenance log for the afterburner or other approved control device and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages; and

D) A log detailing checks on the air flow direction or air pressure of the dryer and press room to ensure compliance with the requirements of Section 219.407(a)(1)(B) of this Subpart as follows:

i) Prior to August 1, 2010, at least once per 24-hour period while the line is operating; and

ii) On and after August 1, 2010, at least once per calendar month while the line is operating;

4) Notify the Agency in writing of any violation of Section 219.407(a)(1)(C) or (b)(1) of this Subpart within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation;

5) If changing its method of compliance between subsections (a)(1)(C) and (b) of Section 219.407 of this Subpart, certify compliance for the new method of compliance in accordance with subsection (d)(1) of this Section at least 30 days before making such change, and perform all tests and calculations necessary to demonstrate that such printing lines will be in compliance with the requirements of Section 219.407(a)(1)(B), (a)(1)(C), (a)(1)(D) and (a)(1)(E) of this Subpart, or Section 219.407(b) of this Subpart, as applicable.

e) An owner or operator of a lithographic printing line subject to Section 219.407(a)(1)(A), (a)(2), or (a)(3) of this Subpart shall:

1) By August 1, 2010, and upon initial start-up of a new lithographic printing line, certify to the Agency that fountain solutions used on each lithographic printing line will be in compliance with the applicable VOM content limitation. Such certification shall include:

A) Identification of each lithographic printing line at the source, by type, e.g., heatset web offset, non-heatset web offset, or sheet-fed offset;

B) Identification of each centralized fountain solution reservoir and each lithographic printing line that it serves;

C) A statement that the fountain solution will comply with the VOM content limitations in Section 219.407(a)(1)(A), (a)(2), or (a)(3), as applicable;

D) Initial documentation that each type of fountain solution will comply with the applicable VOM content limitations, including copies of manufacturer's specifications, test results, if any, formulation data and calculations;

E) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitation, e.g., a refractometer, hydrometer, conductivity meter, or recordkeeping procedures with detailed description of the compliance methodology; and

F) A sample of the records that will be kept pursuant to subsection (e)(2) of this Section.

2) Collect and record the following information for each fountain solution:

   A) The name and identification of each batch of fountain solution prepared for use on one or more lithographic printing lines, the lithographic printing lines or centralized reservoir using such batch of fountain solution, and the applicable VOM content limitation for the batch;

   B) If an owner or operator uses a hydrometer, refractometer, or conductivity meter, pursuant to Section 219.410(b)(1)(B), to demonstrate compliance with the applicable VOM content limit in Section 219.407(a)(1)(A), (a)(2), or (a)(3) of this Subpart:

      i) The date and time of preparation, and each subsequent modification, of the batch;

      ii) The results of each measurement taken in accordance with Section 219.410(b) of this Subpart;

      iii) Documentation of the periodic calibration of the meter in accordance with the manufacturer's specifications, including date and time of calibration, personnel conducting, identity of standard solution, and resultant reading; and

      iv) Documentation of the periodic temperature adjustment of the meter, including date and time of adjustment, personnel conducting and results;

   C) If the VOM content of the fountain solution is determined pursuant to Section 219.410(b)(1)(A) of this Subpart, for each batch of as-applied fountain solution:

      i) Date and time of preparation and each subsequent modification of the batch;

      ii) Volume or weight, as applicable, and VOM content of each component used in, or subsequently added to, the fountain solution batch;

      iii) Calculated VOM content of the as-applied fountain solution; and

      iv) Any other information necessary to demonstrate compliance with the applicable VOM content limits in Section 219.407(a)(1)(A), (a)(2) and (a)(3) of this Subpart, as specified in the source's operating permit;

D) If the VOM content of the fountain solution is determined pursuant to Section 219.410(b)(2) of this Subpart, for each setting:

i) VOM content limit corresponding to each setting;

ii) Date and time of initial setting and each subsequent setting;

iii) Documentation of the periodic calibration of the automatic feed equipment in accordance with the manufacturer's specifications; and

iv) Any other information necessary to demonstrate compliance with the applicable VOM content limits in Section 219.407(a)(1)(A), (a)(2) and (a)(3) of this Subpart, as specified in the source's operating permit.

E) If the owner or operator relies on the temperature of the fountain solution to comply with the requirements in Section 219.407(a)(1)(A)(ii) or (a)(3)(B) of this Subpart:

i) The temperature of the fountain solution at each printing line, as monitored in accordance with Section 219.410(a); and

ii) A maintenance log for the temperature monitoring devices and automatic, continuous temperature recorders detailing all routine and non-routine maintenance performed, including dates and duration of any outages.

3) Notify the Agency in writing of any violation of Section 219.407 of this Subpart within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation.

f) For lithographic printing line cleaning operations, an owner or operator of a lithographic printing line subject to the requirements of Section 219.407 of this Subpart shall:

1) By August 1, 2010, and upon initial start-up of a new lithographic printing line, certify to the Agency that all cleaning solutions, other than those excluded pursuant to Section 219.405(c)(3)(C), and the handling of all cleaning materials, will be in compliance with the requirements of Section 219.407(a)(4)(A) or (a)(4)(B) and (a)(5) of this Subpart, and such certification shall also include:

A) A statement that the cleaning solution will comply with the limitations in Section 219.407(a)(4);

B) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;

C) A sample of the records that will be kept pursuant to subsection (f)(2) of this Section; and

D) A description of the practices that ensure that VOM-containing cleaning materials are kept in closed containers;

2) Collect and record the following information for each cleaning solution used on each lithographic printing line:

A) For each cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Section 219.407(a)(4)(A) of this Subpart and that is prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Section 219.409(c) of this Subpart;

iii) Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);

iv) The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;

v) The VOM content of the as-used cleaning solution, with supporting calculations; and

vi) A calibration log for the automatic equipment, detailing periodic checks;

B) For each batch of cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Section 219.407(a)(4)(A) of this Subpart, and that is not prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) Date and time of preparation, and each subsequent modification, of the batch;

iii) The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Section 219.409(c) of this Subpart;

iv) The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and

v) The VOM content of the as-used cleaning solution, with supporting calculations. For cleaning solutions that are used as purchased, the manufacturer's specifications for VOM content may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part;

C) For each batch of cleaning solution for which the owner or operator relies on the vapor pressure of the cleaning solution to demonstrate compliance with Section 219.407(a)(4)(B) of this Subpart:

i) The name and identification of each cleaning solution;

ii) Date and time of preparation, and each subsequent modification, of the batch;

iii) The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with Section 219.409(e) of this Subpart. For cleaning solutions that are used as purchased, the manufacturer's specifications for VOM composite partial vapor pressure may be used if such manufacturer's specifications are based on results of tests conducted in accordance with methods specified in Sections 219.105(a) and 219.110 of this Part;

iv) The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and

v) The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with Section 219.409(e) of this Subpart. For cleaning solutions that are used as purchased, the manufacturer's specifications for VOM composite partial vapor pressure may be used if such manufacturer's specifications are based on results of tests conducted in accordance with methods specified in Sections 219.105(a) and 219.110 of this Part;

D) The date, time and duration of scheduled inspections performed to confirm the proper use of closed containers to control VOM emissions, and any instances of improper use of closed containers, with descriptions of actual practice and corrective action taken, if any;

3) Notify the Agency in writing of any violation of Section 219.407 of this Subpart within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation.

g) The owner or operator of lithographic printing lines subject to one or more of the exclusions set forth in Section 219.405(c)(3) shall:

1) By August 1, 2010, or upon initial start-up of a new lithographic printing line that is subject to one or more of the exclusions set forth in Section 219.405(c)(3), whichever is later, submit a certification to the Agency that includes either:

A) A declaration that the source is subject to one or more of the exclusions set forth in Section 219.405(c)(3) and a statement indicating which such exclusions apply to the source; or

B) A declaration that the source will not make use of any of the exclusions set forth in Section 219.405(c)(3);

2) Unless the source has certified in accordance with subsection (g)(1)(B) of this Section that it will not make use of any of the exclusions set forth in Section 219.405(c)(3):

A) Collect and record the following information for all lithographic printing lines at the source:

i) Calculations that demonstrate that combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source never exceed 45.5 kg/day (100 lbs/day) before the use of capture systems and control devices, determined in accordance with the calculations in subsection (b)(2)(B) of this Section;

ii) The name, identification, and volume of all cleaning materials used per calendar month on lithographic printing lines at the source that do not comply with the cleaning material limitations in Section 219.407(a)(4) of this Subpart;

B) Notify the Agency in writing if the combined emissions of VOM from all lithographic printing lines (including inks, fountain solutions, and solvents used for cleanup operations associated with the lithographic printing lines) at the source ever exceed 45.5

kg/day (100 lbs/day), before the use of capture systems and control devices, within 30 days after the event occurs;

3) If changing from utilization of the exclusions set forth in Section 219.405(c)(3) to opting out of such exclusions pursuant to subsection (g)(1)(B) of this Section, or if there is a change at the source such that the exclusions no longer apply, certify compliance in accordance with subsection (g)(1)(B) of this Section within 30 days after making such change, and perform all tests and calculations necessary to demonstrate that such printing lines will be in compliance with the applicable requirements of Section 219.407 of this Subpart;

4) If changing from opting out of the exclusions set forth in Section 219.405(c)(3) pursuant to subsection (g)(1)(B) of this Section to utilization of such exclusions, certify compliance in accordance with subsection (g)(1)(A) of this Section within 30 days after making such change.

h) The owner or operator shall maintain all records required by this Section at the source for a minimum period of three years and shall make all records available to the Agency upon request.

i) Provisions for Calculation of Emissions from Heatset Web Offset Lithographic Printing Operations. To calculate VOM emissions from heatset web offset lithographic printing operations for purposes other than the applicability thresholds specified in Section 219.405 of this Subpart, sources may use the following emission adjustment factors (for Annual Emissions Reports or permit limits, for example):

1) A factor of 0.80 may be used in calculating emissions from all heatset inks to account for VOM retention in the substrate except when using an impervious substrate. For impervious substrates such as metal or plastic, no emission adjustment factor is used. The VOM content of the ink, as used, shall be multiplied by this factor to determine the amount of VOM emissions from the use of ink on the printing lines;

2) To determine VOM emissions from fountain solutions that contain no alcohol, an emission adjustment factor may be used to account for carryover into the dryer, except when using an impervious substrate.

A) The VOM emitted from the fountain solution shall be calculated using the following equation:

$$VOM_{fs} = 0.30 \times VOM_{tot} + (0.70 \times VOM_{tot}) \times (1 - DE)$$

where:

VOM_{tot} = Total VOM in the fountain solution;

VOM_{fs} = VOM emitted from the fountain solution;

DE = Destruction efficiency of the control device on the associated dryer, in decimal form (i.e., 95% control is represented as 0.95). If no control device is present, DE = 0;

B) For fountain solutions that contain alcohol, impervious substrates such as metal or plastic, or non-heatset lithographic presses, no emission adjustment factor is used;

3) To determine VOM emissions from cleaning solutions used on heatset web offset lithographic printing lines at the source, an emission adjustment factor of 0.50 may be used in calculating emissions from used shop towels if the VOM composite vapor pressure of each associated cleaning solution is less than 10 mmHg measured at 20°C (68°F) and the shop towels are kept in closed containers. To determine VOM emissions from automatic blanket wash solution with a VOM composite vapor pressure of less than 10 mmHg measured at 20°C (68°F), an emission adjustment factor may be used to account for carryover into the dryer, except when using an impervious substrate.

A) The VOM emitted from the automatic blanket wash solution shall be calculated using the following equation:

$$VOM_{bw} = 0.60 \times VOM_{tot} + (0.40 \times VOM_{tot}) \times (1 - DE)$$

where:

VOM_{tot} = Total VOM in the blanket wash;

VOM_{bw} = VOM emitted from the blanket wash;

DE = Destruction efficiency of the control device on the associated dryer, in decimal form (i.e., 95% control is represented as 0.95). If no control device is present, DE = 0;

B) For cleaning solutions with VOM composite vapor pressures of equal to or greater than 10 mmHg measured at 20°C (68°F), for shop towels that are not kept in closed containers, and for impervious substrates such as metal or plastic, no emission adjustment factor is used.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.412 Letterpress Printing Lines: Applicability

a) Except as provided in subsection (b) of this Section, on and after August 1, 2010, the limitations in Sections 219.413 through 219.416 of this Subpart shall apply to:

1) All heatset web letterpress printing lines at a source if all heatset web letterpress printing lines (including solvents used for cleanup operations associated with heatset web letterpress printing lines) at the source have a total potential to emit 22.7 Mg (25 tons) or more of VOM per year; and

2) All letterpress printing lines at a source where the combined emissions of VOM from all letterpress printing lines at the source (including solvents used for cleanup operations associated with the letterpress printing lines) ever equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment, calculated in accordance with Section 219.417(b)(1)(B).

b) Notwithstanding subsection (a) of this Section, the requirements of Section 219.413(a)(2) of this Subpart shall not apply to up to 416.3 liters (110 gallons) per year of cleaning materials used on letterpress printing lines at a subject source.

c) On and after August 1, 2010, the recordkeeping and reporting requirements in Section 219.417 of this Subpart shall apply to all owners or operators of letterpress printing lines.

d) If a letterpress printing line at a source is or becomes subject to one or more of the limitations in Section 219.413 of this Subpart, the letterpress printing lines at the source are always subject to the applicable provisions of this Subpart.

(Source: Added at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.413 Emission Limitations and Control Requirements for Letterpress Printing Lines

a) No owner or operator of letterpress printing lines subject to the requirements of this Subpart shall:

1) Cause or allow the operation of any heatset web letterpress printing line that meets the applicability requirements of Section 219.412(a)(1) unless:

A) The air pressure in the dryer is maintained lower than the air pressure of the press room, such that air flow through all openings in the dryer, other than the exhaust, is into the dryer at all times when the printing line is operating;

B) An afterburner is installed and operated so that VOM emissions (excluding methane and ethane) from the press dryer exhausts are reduced as follows:

i) By 90 percent, by weight, for afterburners first constructed at the source prior to January 1, 2010;

ii) By 95 percent, by weight, for afterburners first constructed at the source on or after January 1, 2010; or

iii) To a maximum afterburner exhaust outlet concentration of 20 ppmv (as carbon);

C) The afterburner complies with all monitoring provisions specified in Section 219.416(a) of this Subpart; and

D) The afterburner is operated at all times when the printing line is in operation, except the afterburner may be shut down between November 1 and April 1 as provided in Section 219.107 of this Part;

2) Cause or allow the use of a cleaning solution on any letterpress printing line unless:

A) The VOM content of the as-used cleaning solution is less than or equal to 70 percent, by weight; or

B) The VOM composite partial vapor pressure of the as-used cleaning solution is less than 10 mmHg at 20ºC (68ºF);

3) Cause or allow VOM-containing cleaning materials, including used cleaning towels, associated with any letterpress printing line to be kept, stored, or disposed of in any manner other than in closed containers, except when specifically in use.

b) An owner or operator of a heatset web letterpress printing line subject to the requirements of subsection (a)(1)(B) of this Section may use a control device other than an afterburner, if:

1) The control device reduces VOM emissions from the press dryer exhausts as follows:

A) By 90 percent, by weight, for control devices first constructed at the source prior to January 1, 2010;

B) By 95 percent, by weight, for control devices first constructed at the source on or after January 1, 2010; or

C) To a maximum control device exhaust outlet concentration of 20 ppmv (as carbon);

2) The owner or operator submits a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for the control device; and

3) The use of the control device in accordance with this plan is approved by

the Agency and USEPA as federally enforceable permit conditions.

(Source: Added at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.415 Testing for Letterpress Printing Lines

a) Testing to demonstrate compliance with the requirements of Section 219.413 of this Subpart shall be conducted by the owner or operator by January 1, 2012, unless such testing has been conducted within the two years immediately preceding January 1, 2012. Thereafter, testing shall be conducted by the owner or operator within 90 days after a request by the Agency, or as otherwise specified in this Subpart. Such testing shall be conducted at the expense of the owner or operator, and the owner or operator shall notify the Agency in writing 30 days in advance of conducting such testing to allow the Agency to be present during such testing.

b) The methods and procedures of Section 219.105(d) and (f) shall be used for testing to demonstrate compliance with the requirements of Section 219.413(a)(1)(B) or (b)(1) of this Subpart, as follows:

1) To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part. The sampling sites for determining efficiency in reducing VOM from the dryer exhaust shall be located between the dryer exhaust and the control device inlet, and between the outlet of the control device and the exhaust to the atmosphere;

2) To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part;

3) To determine the VOM concentration of the exhaust stream entering and exiting the control device, Method 25 or 25A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part. For thermal and catalytic afterburners, Method 25 must be used except under the following circumstances, in which case Method 25A must be used:

A) The allowable outlet concentration of VOM from the control device is less than 50 ppmv, as carbon;

B) The VOM concentration at the inlet of the control device and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon; and

C) Due to the high efficiency of the control device, the anticipated VOM concentration at the control device exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest shall be conducted using either Method 25 or Method 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest using Method 25;

4) Notwithstanding the criteria or requirements in Method 25 which specifies a minimum probe temperature of 129°C (265°F), the probe must be heated to at least the gas stream temperature of the dryer exhaust, typically close to 176.7°C (350°F);

5) During testing, the printing lines shall be operated at representative operating conditions and flow rates; and

6) During testing, an air flow direction indicating device, such as a smoke stick, shall be used to demonstrate 100 percent emissions capture efficiency for the dryer in accordance with Section 219.413(a)(1)(A) of this Subpart.

c) Testing to demonstrate compliance with the VOM content limitations in Section 219.413(a)(2)(A) of this Subpart, and to determine the VOM content of cleaning solvents, cleaning solutions, and inks (pursuant to the requirements of Section 219.417(b)(1)(B) of this Subpart), shall be conducted upon request of the Agency, or as otherwise specified in this Subpart, as follows:

1) The applicable test methods and procedures specified in Section 219.105(a) of this Part shall be used; provided, however, Method 24, incorporated by reference in Section 219.112 of this Part, shall be used to demonstrate compliance; or

2) The manufacturer's specifications for VOM content for cleaning solvents and inks may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part; provided, however, Method 24 shall be used to determine compliance.

d) Testing to demonstrate compliance with the requirements of Section 219.413(b) of this Subpart shall be conducted as set forth in the owner or operator's plan approved by the Agency and USEPA as federally enforceable permit conditions pursuant to Section 219.413(b) of this Subpart.

e) Testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning solvent concentrates, and as-used cleaning solutions shall be conducted in accordance with the applicable methods and procedures specified in Section 219.110 of this Part.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.416 Monitoring Requirements for Letterpress Printing Lines

a) Afterburners for Heatset Web Letterpress Printing Lines. If an afterburner is used to demonstrate compliance, the owner or operator of a heatset web letterpress printing line subject to Section 219.413(a)(1)(B) of this Subpart shall:

1) Install, calibrate, maintain, and operate temperature monitoring devices with an accuracy of 3°C or 5°F on the afterburner in accordance with Section 219.105(d)(2) of this Part and in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the afterburner is operating; and

2) Install, calibrate, operate, and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring devices, such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor.

b) Other Control Devices for Heatset Web Letterpress Printing Lines. If a control device other than an afterburner is used to demonstrate compliance, the owner or operator of a heatset web letterpress printing line subject to this Subpart shall install, maintain, calibrate, and operate such monitoring equipment as set forth in the owner or operator's plan approved by the Agency and USEPA pursuant to Section 219.413(b) of this Subpart.

c) Cleaning Solution

1) The owner or operator of any letterpress printing line relying on the VOM content of the cleaning solution to comply with Section 219.413(a)(2)(A) of this Subpart must:

A) For cleaning solutions that are prepared at the source with equipment that automatically mixes cleaning solvent and water (or other non-VOM):

i) Install, operate, maintain, and calibrate the automatic feed equipment in accordance with manufacturer's specifications to regulate the volume of each of the cleaning solvent and water (or other non-VOM), as mixed; and

ii) Pre-set the automatic feed equipment so that the consumption rates of the cleaning solvent and water (or other non-VOM), as applied, comply with Section 219.413(a)(2)(A) of this Subpart;

B) For cleaning solutions that are not prepared at the source with automatic feed equipment, keep records of the usage of cleaning solvent and water (or other non-VOM) as set forth in Section 219.417(c)(2) of this Subpart.

2) The owner or operator of any letterpress printing line relying on the vapor pressure of the cleaning solution to comply with Section 219.413(a)(2)(B) of this Subpart must keep records for such cleaning solutions used on any such lines as set forth in Section 219.417(e)(2)(C) of this Subpart.

(Source: Added at 34 Ill. Reg. 9253, effective June 25, 2010)

Section 219.417 Recordkeeping and Reporting for Letterpress Printing Lines

a) By August 1, 2010, or upon initial start-up of a new heatset web letterpress printing line, whichever is later, and upon modification of a heatset web letterpress printing line, an owner or operator of a heatset web letterpress printing line exempt from any of the limitations of Section 219.413 of this Subpart because of the criteria in Section 219.412(a)(1) shall submit a certification to the Agency that includes:

1) A declaration that the source is exempt from the requirements in Section 219.413 of this Subpart because of the criteria in Section 219.412(a)(1) of this Subpart;

2) Calculations which demonstrate that the source's total potential to emit VOM does not equal or exceed 22.7 Mg (25 tons) per year.

b) An owner or operator of a letterpress printing line exempt from any of the limitations of Section 219.413 of this Subpart because of the criteria in Section 219.412(a)(2) shall:

1) By August 1, 2010, or upon initial start-up of a new letterpress printing line, whichever is later, and upon modification of a letterpress printing line, submit a certification to the Agency that includes the information specified in either subsections (b)(1)(A) through (b)(1)(C) of this Section, or subsections (b)(1)(A) and (b)(1)(D) of this Section, as applicable:

A) A declaration that the source is exempt from the control requirements in Section 219.413 of this Part because of the criteria in Section 219.412(a)(2) of this Subpart;

B) Calculations that demonstrate that combined emissions of VOM from all letterpress printing lines (including inks and solvents used for cleanup operations associated with the letterpress printing lines) at the source never equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment, as follows:

i) To calculate daily emissions of VOM, the owner or operator shall determine the monthly emissions of VOM from all letterpress printing lines at the source (including solvents used for cleanup operations associated with the letterpress printing lines) and divide this amount by the number of days during that calendar month that letterpress printing lines at the source were in operation;

ii) To determine the VOM content of the inks and cleaning solvents, the tests methods and procedures set forth in Section 219.415(c) of this Subpart shall be used;

iii) To determine VOM emissions from inks used on letterpress printing lines at the source, an ink emission adjustment factor of 0.05 shall be used in calculating emissions from all non-heatset inks except when using an impervious substrate, and a factor of 0.80 shall be used in calculating emissions from all heatset inks to account for VOM retention in the substrate except when using an impervious substrate. For impervious substrates such as metal or plastic, no emission adjustment factor is used. The VOM content of the ink, as used, shall be multiplied by this factor to determine the amount of VOM emissions from the use of ink on the printing lines; and

iv) To determine VOM emissions from cleaning solutions used on letterpress printing lines at the source, an emission adjustment factor of 0.50 shall be used in calculating emissions from used shop towels if the VOM composite vapor pressure of each associated cleaning solution is less than 10 mmHg measured at 20°C (68°F) and the shop towels are kept in closed containers. Otherwise, no retention factor is used;

C) A description and the results of all tests used to determine the VOM content of inks and cleaning solvents, and a declaration that all such tests have been properly conducted in accordance with Section 219.415(c)(1) of this Subpart;

D) As an alternative to the calculations in subsection (b)(1)(B), a statement that the source uses less than the amount of material specified in subsection (b)(1)(D)(i) or (b)(1)(D)(ii), as applicable, during each calendar month. A source may determine that it emits below 6.8 kg/day (15 lbs/day) of VOM based upon compliance with such material use limitations. If the source exceeds this amount of material use in a given calendar month, the owner or operator must, within 15 days of the end of that month, complete the emissions calculations of subsection (b)(1)(B) to determine daily emissions for applicability purposes. If the source ever exceeds this amount of material use for six consecutive calendar months, it is no longer eligible to use this subsection as an alternative to the calculations in subsection (b)(1)(B). If a source has both heatset web and either nonheatset web or sheetfed letterpress printing operations, or has all three types of printing operations, the owner or operator may not make use of this alternative and must use the calculations in subsection (b)(1)(B).

i) The sum of all sheetfed and nonheatset web letterpress printing operations at the source: 242.3 liters (64 gallons) of cleaning solvent; or

ii) The sum of all heatset web letterpress printing operations at the source: 204.1 kg (450 lbs) of ink and cleaning solvent;

2) For sources complying with subsection (b)(1)(B) of this Section, notify the Agency in writing if the combined emissions of VOM from all letterpress printing lines (including inks and solvents used for cleanup operations associated with the letterpress printing lines) at the source ever equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment, within 30 days after the event occurs;

3) For sources complying with subsection (b)(1)(D) of this Section, comply with the following:

A) Maintain material use records showing that the source uses less than the amount of material specified in subsections (b)(1)(D)(i) and (b)(1)(D)(ii) during each calendar month, or, if the source exceeds the material use limitations, records showing that the source exceeded the limitations but did not emit 6.8 kg/day (15 lbs/day) or more of VOM. On and after January 1, 2012, such records shall include the name, identification number, and VOM content of each cleaning solvent and ink used per calendar month, the volume of each cleaning solvent used per calendar month for each sheetfed and nonheatset web letterpress printing operation, and the weight of each cleaning solvent and ink used per calendar month for each heatset web letterpress printing operation;

B) Notify the Agency in writing if the source exceeds the material use limitations for six consecutive calendar months, or if the source changes its method of compliance from subsection (b)(1)(D) to subsection (b)(1)(B) of this Section, within 30 days after the event occurs.

c) Unless complying with subsections (b)(1)(D) and (b)(3) of this Section, on and after August 1, 2010, an owner or operator of a letterpress printing line exempt from any of the limitations in Section 219.413 of this Subpart because of the criteria in Section 219.412(a)(1) or (a)(2) shall collect and record either the information specified in subsection (c)(1) or (c)(2) of this Section for all letterpress printing lines at the source:

1) Standard recordkeeping, including the following:

   A) The name and identification of each letterpress ink and cleaning solvent used on any letterpress printing line, recorded each month;

   B) A daily record that shows whether a letterpress printing line at the source was in operation on that day;

   C) The VOM content and the volume of each letterpress ink and cleaning solvent used on any letterpress printing line, recorded each month;

   D) The total VOM emissions at the source each month, determined as the sum of the product of usage and VOM content for each cleaning solvent and letterpress ink (with the applicable ink VOM emission adjustment) used at the source, calculated each month; and

   E) The VOM emissions in lbs/day for the month, calculated in accordance with subsection (b)(1)(B) of this Section;

2) Purchase and inventory recordkeeping, including the following:

   A) The name, identification, and VOM content of each letterpress ink and cleaning solvent used on any letterpress printing line, recorded each month;

   B) Inventory records from the beginning and end of each month indicating the total volume of each letterpress ink, and cleaning solvent to be used on any letterpress printing line at the source;

   C) Monthly purchase records for each letterpress ink and cleaning solvent used on any letterpress printing line at the source;

   D) A daily record that shows whether a letterpress printing line at the source was in operation on that day;

   E) The total VOM emissions at the source each month, determined as the sum of the product of usage and VOM content for each cleaning solvent and letterpress ink (with the applicable ink VOM emission adjustment factor) used at the source, calculated each month based on the monthly inventory and purchase records required to be maintained pursuant to subsections (c)(2)(A), (c)(2)(B), and (c)(2)(C) of this Section; and

F) The VOM emissions in lbs/day for the month, calculated in accordance with subsection (b)(1)(B) of this Section.

d) An owner or operator of a heatset web letterpress printing lines subject to the control requirements of Section 219.413(a)(1)(B) or (b)(1) of this Subpart shall comply with the following:

1) By August 1, 2010, or upon initial start-up of a new printing line, whichever is later, and upon initial start-up of a new control device for a heatset web printing line, submit a certification to the Agency that includes the following:

A) An identification of each heatset web letterpress printing line at the source;

B) A declaration that each heatset web letterpress printing line is in compliance with the requirements of Section 219.413(a)(1) or (b) of this Subpart, as appropriate;

C) The type of afterburner or other approved control device used to comply with the requirements of Section 219.413(a)(1)(B) or (b)(1) of this Subpart, and the date that such device was first constructed at the subject source;

D) The control requirements in Section 219.413(a)(1)(B) or (b)(1) of this Subpart with which the letterpress printing line is complying;

E) The results of all tests and calculations necessary to demonstrate compliance with the control requirements of Section 219.413(a)(1)(B) or (b)(1) of this Subpart, as applicable; and

F) A declaration that the monitoring equipment required under Section 219.413(a)(1)(C) or (b) of this Subpart, as applicable, has been properly installed and calibrated according to manufacturer's specifications;

2) If testing of the afterburner or other approved control device is conducted pursuant to Section 219.415(b) of this Subpart, the owner or operator shall, within 90 days after conducting such testing, submit a copy of all test results to the Agency and shall submit a certification to the Agency that includes the following:

A) A declaration that all tests and calculations necessary to demonstrate whether the letterpress printing lines is in compliance with Section 219.413(a)(1)(B) or (b)(1) of this Subpart, as applicable, have been properly performed;

B) A statement whether the heatset web letterpress printing lines are or are not in compliance with Section 219.413(a)(1)(B) or (b)(1) of this Subpart, as applicable; and

C) The operating parameters of the afterburner or other approved control device during testing, as monitored in accordance with Section 219.416(a) or (b) of this Subpart, as applicable;

3) Except as provided in subsection (d)(3)(D) of this Section, collect and record daily the following information for each heatset web letterpress printing line subject to the requirements of Section 219.413(a)(1)(B) or (b)(1) of this Subpart:

A) Afterburner or other approved control device monitoring data in accordance with Section 219.416(a) or (b) of this Subpart, as applicable;

B) A log of operating time for the afterburner or other approved control device, monitoring equipment, and the associated printing line;

C) A maintenance log for the afterburner or other approved control device and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages; and

D) A log detailing checks on the air flow direction or air pressure of the dryer and press room to ensure compliance with the requirements of Section 219.413(a)(1)(A) of this Subpart at least once per calendar month while the line is operating;

4) Notify the Agency in writing of any violation of Section 219.413(a)(1)(B) or (b)(1) of this Subpart within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation;

5) If changing the method of compliance between Sections 219.413(a)(1)(B) and 219.413(b) of this Subpart, certify compliance for the new method of compliance in accordance with Section 219.413(b) at least 30 days before making such change, and perform all tests and calculations necessary to demonstrate that such printing lines will be in compliance with the requirements of Section 219.413(a)(1) of this Subpart, or Section 219.413(b) of this Subpart, as applicable.

e) For letterpress printing line cleaning operations, an owner or operator of a letterpress printing line subject to the requirements of Section 219.413 of this Subpart shall:

1) By August 1, 2010, or upon initial start-up of a new letterpress printing line, whichever is later, certify to the Agency that all cleaning solutions, other than those excluded pursuant to Section 219.412(b), and the handling of all cleaning materials will be in compliance with the requirements of Section 219.413(a)(2)(A) or (a)(2)(B) and (a)(3) of this Subpart. Such certification shall include:

A) A statement that the cleaning solution will comply with the limitations in Section 219.413(a)(2);

B) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;

C) A sample of the records that will be kept pursuant to subsection (e)(2) of this Section; and

D) A description of the practices that ensure that VOM-containing cleaning materials are kept in closed containers;

2) Collect and record the following information for each cleaning solution used on each letterpress printing line:

A) For each cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Section 219.413(a)(2)(A) of this Subpart and that is prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Section 219.415(c) of this Subpart;

iii) Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);

iv) The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;

v) The VOM content of the as-used cleaning solution, with supporting calculations; and

vi) A calibration log for the automatic equipment, detailing periodic checks;

B) For each batch of cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Section 219.413(a)(2)(A) of this Subpart, and that is not prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) Date and time of preparation, and each subsequent modification, of the batch;

iii) The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Section 219.415(c) of this Subpart;

iv) The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and

v) The VOM content of the as-used cleaning solution, with supporting calculations. For cleaning solutions that are used as purchased, the manufacturer's specifications for VOM content may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part;

C) For each batch of cleaning solution for which the owner or operator relies on the vapor pressure of the cleaning solution to demonstrate compliance with Section 219.413(a)(2)(B) of this Subpart:

i) The name and identification of each cleaning solution;

ii) Date and time of preparation, and each subsequent modification, of the batch;

iii) The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with Section 219.415(e) of this Subpart. For cleaning solutions that are used as purchased, the manufacturer's specifications for VOM composite partial vapor pressure may be used if such manufacturer's specifications are based on results of tests conducted in accordance with methods specified in Sections 219.105(a) and 219.110 of this Part;

iv) The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and

v) The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with Section 219.415(e) of this Subpart. For cleaning solutions that are used as purchased, the manufacturer's specifications for VOM composite partial vapor pressure may be used if such manufacturer's specifications are based on results of tests conducted in accordance with methods specified in Sections 219.105(a) and 219.110 of this Part;

D) The date, time, and duration of scheduled inspections performed to confirm the proper use of closed containers to control VOM emissions, and any instances of improper use of closed containers, with descriptions of actual practice and corrective action taken, if any;

E) The amount of cleaning materials used on letterpress printing lines at the source that do not comply with the cleaning material limitations set forth in Section 219.413(a)(2) of this Subpart;

3) Notify the Agency in writing of any violation of Section 219.413 of this Subpart within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation.

f) The owner or operator shall maintain all records required by this Section at the source for a minimum period of three years and shall make all records available to the Agency upon request.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

SUBPART Q: LEAKS FROM SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING PLANT

Section 219.421 General Requirements

The owner or operator of a plant which processes more than 3660 mg/yr (4033 tons/year) gaseous and light liquid VOM, and whose components are used to manufacture the synthetic organic chemicals or polymers listed in Appendix A, shall comply with this Subpart. The provisions of this Subpart are applicable to components containing 10 percent or more by weight VOM as determined by ASTM method E-168, E-169 and E-260, incorporated by reference in Section 219.112 of this Part. Those components that are not process unit components are exempt from this Subpart. A component shall be considered to be leaking if the VOM is equal to, or is greater than 10,000 ppmv as methane or hexane as determined by USEPA Reference Method 21, as specified at 40 CFR 60, Appendix A, incorporated by reference in Section 219.112 of this Part, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed. The provisions of this Subpart are not applicable if the equipment components are used to produce heavy liquid chemicals only from heavy liquid feed or raw materials.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.422 Inspection Program Plan for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 219.421 of this Part shall prepare an inspection program plan which contains, at a minimum:

a) An identification of all components and the period in which each will be monitored pursuant to Section 219.423 of this Part.

b) The format for the monitoring log required by Section 219.425 of this Part.

c) A description of the monitoring equipment to be used when complying with Section 219.423 of this Part, and

d) A description of the methods to be used to identify all pipeline valves, pressure relief valves in gaseous service, all leaking components, and components exempted under Section 219.423(j) of this Part such that they are obvious and can be located by both plant personnel performing monitoring and Agency personnel performing inspections.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.423 Inspection Program for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to this Subpart shall, for the purposes of detecting leaks, conduct a component inspection program using the test methods specified in Method 21, 40 CFR 60, Appendix A (1986), incorporated by reference in Section 219.112 of this Part, consistent with the following provisions:

a) Test annually those components operated near extreme temperature or pressure such that they would be unsafe to routinely monitor and those components which would require the elevation of monitoring personnel higher than two meters above permanent worker access structures or surfaces.

b) Test quarterly all other pressure relief valves in gas service, pumps in light liquid service, valves in light liquid service and in gas service, and compressors.

c) If less than or equal to 2 percent of the valves in light liquid service and in gas service tested pursuant to subsection (b) of this Section are found to leak for five consecutive quarters, no leak tests shall be required for three consecutive quarters. Thereafter, leak tests shall resume for the next quarter. If that test shows less than or equal to 2 percent of the valves in light liquid service and in gas service are leaking, then no tests are required for the next three quarters. If more than 2 percent are leaking, then tests are required for the next five quarters.

d) Observe visually all pump seals weekly.

e) Test immediately any pump seal from which liquids are observed dripping.

f) Test any relief valve within 24 hours after it has vented to the atmosphere.

g) Routine instrument monitoring of valves which are not externally regulated, flanges, and equipment in heavy liquid service, is not required. However, any valve which is not externally regulated, flange or piece of equipment in heavy liquid service that is found to be leaking on the basis of sight, smell or sound shall be repaired as soon as practicable but no later than 30 days after the leak is found.

h) Test immediately after repair any component that was found leaking.

i) Within one hour of its detection, a weatherproof, readily visible tag, in bright colors such as red or yellow, bearing an identification number and the date on which the leak was detected must be affixed on the leaking component and remain in place until the leaking component is repaired.

j) The following components are exempt from the monitoring requirements in this Section:

  1) Any component that is in vacuum service, and

  2) Any pressure relief valve that is connected to an operating flare header or vapor recovery device.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.424 Repairing Leaks

All leaking components must be repaired and retested as soon as practicable but no later than 15 days after the leak is found unless the leaking component cannot be repaired until the process unit is shut down. Records of repairing and retesting must be maintained in accordance with Section 219.425 and 219.426 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.425 Recordkeeping for Leaks

a) The owner or operator of a synthetic organic chemical or polymer manufacturing plant shall maintain a leaking components monitoring log which shall contain, at a minimum, the following information:

  1) The name of the process unit where the component is located;

  2) The type of component (e.g., valve, seal);

  3) The identification number of the component;

  4) The date on which a leaking component is discovered;

5) The date on which a leaking component is repaired;

6) The date and instrument reading of the recheck procedure after a leaking component is repaired;

7) A record of the calibration of the monitoring instrument;

8) The identification number of leaking components which cannot be repaired until process unit shutdown; and

9) The total number of valves in light liquid service and in gas service inspected; the total number and the percentage of these valves found leaking during the monitoring period.

b) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two years after the date on which the record was made or the report was prepared.

c) Copies of the monitoring log shall be made available to the Agency, upon verbal or written request, prior to or at the time of inspection pursuant to Section 4(d) of the Environmental Protection Act (Act) (Ill. Rev. Stat. 1991, ch. 1111/2, pars. 1001 et seq.) [415 ILCS 5/1 et seq.] at any reasonable time.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.426 Report for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 219.421 through 219.430 of this Part shall:

a) Submit quarterly reports to the Agency on or before March 31, June 30, September 30, and December 31 of each year, listing all leaking components identified pursuant to Section 219.423 of this Part but not repaired within 15 days, all leaking components awaiting process unit shutdown, the total number of components inspected, the type of components inspected, and the total number of components found leaking, the total number of valves in light liquid service and in gas service inspected and the number and percentage of valves in light liquid service and in gas service found leaking.

b) Submit a signed statement with the report attesting that all monitoring and repairs were performed as required under Section 219.421 through 219.427 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.427 Alternative Program for Leaks

The Agency shall approve an alternative program of monitoring, recordkeeping, or reporting to that prescribed in this Subpart upon a demonstration by the owner or operator of such plant that the alternative program will provide source personnel and Agency personnel with an equivalent ability to identify and repair leaking components. Any alternative program can be allowed when approved by the Agency and approved by the USEPA as a SIP revision.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.428 Open-Ended Valves

a) Each open-ended valve shall be equipped with a cap, blind flange, plug, or a second valve, except during operations requiring fluid flow through the open-ended valve.

b) Each open-ended valve equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

c) Components which are open-ended valves and which serve as a sampling connection shall be controlled such that they comply with subsection (c)(1), (c)(2) or (c)(3) below. This requirement does not apply to in-situ sampling systems.

   1) A closed purge system or closed vent system shall return purged process fluid to the process line with no detectable volatile organic material emissions to the atmosphere, or

   2) A closed purge system or closed vent system shall collect and recycle purged process fluid to the process line with no detectable volatile organic material emissions to the atmosphere, or

   3) Purged process fluid shall be transported to a control device that complies with the requirements of Section 219.429 of this Part. If a container is used to transport purged process fluid to the control device, the container shall be a closed container designed and used to reduce the VOM emissions vented from purged process fluid after transfer to no detectable VOM emissions as determined by USEPA Reference Method 21, as specified in 40 CFR 60, Appendix A (1990 or 1991) incorporated by reference in Section 219.112 of this Part. For purposes of this Section, the phrase "after transfer" shall refer to the time at which the entire amount of purged process fluid resulting from a flushing or cleaning of the sample line enters the container, provided, however, that purged process fluid may be transferred from the initial container to another closed container prior to disposal, e.g., to a bulk waste storage container.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.429 Standards for Control Devices

Control devices used to comply with Section 219.428(c) of this Part shall comply with the following:

a) If the control device is a vapor recovery system (for example, condensers and adsorbers), it shall be designed and operated to recover the volatile organic material emissions vented to it with an efficiency of 95 percent or greater.

b) If the control device is an enclosed combustion device, it shall be designed and operated to reduce the volatile organic material emissions vented to it with an efficiency of 95 percent or greater, or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816° C.

c) If the control device is a flare, it shall:

1) Be designed for and operated with no visible emissions as determined by USEPA Reference Method 22, 40 CFR 60, Appendix A (1986), incorporated by reference in Section 219.112 of this Part, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

2) Be operated with a pilot flame present at all times and shall be monitored with a thermocouple or any other equivalent device to detect the presence of the pilot flame.

3) Be steam-assisted, air-assisted, or nonassisted.

4) Be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be calculated using the following equation:

$$H_r = K \sum_{i=l}^{n} C_i H_i$$

where:

H_r = Net heating value of the sample in MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25° C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20° C;

K = Constant, 1.740×10^{-7} (1/ppm)(g-mole/scm) (MJ/Kcal)

where

standard temperature for (g-mole/scm) is 20° C;

C_i = Concentration of sample component i, in ppm, as measured by USEPA Reference Method 18, 40 CFR 60, Appendix A (1986), and ASTM D 2504-83, both incorporated by reference in Section 219.112 of this Part;

H_i = Net heat of combustion of sample component i, kal/g mole. The heats of combustion may be determined using ASTM D 2382-83, incorporated by reference in Section 219.112 of this Part, if published values are not available or cannot be calculated

5) Steam-assisted and nonassisted flares shall be designed and operated with an exit velocity, as determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by USEPA Reference Method 2 or 2A, 40 CFR 60, Appendix A (1986) incorporated by reference in Section 219.112 of this Part, as appropriate; by the unobstructed (free) cross sectional area of the flare tip, less than 18 m/sec (60 ft/sec).

6) Air-assisted flares shall be designed and operated with an exit velocity less than the maximum permitted velocity, V_{max}, as determined by the following equation:

$V_{max} = 8.706 + 0.7084(H_r)$;

V_{max} = Maximum permitted velocity, m/sec;

8.706 = Constant;

0.7084 = Constant;

H_r = The net heating value as determined in subsection (c)(4) of this section.

d) The following information pertaining to closed vent systems and control devices subject to Section 219.429 shall be maintained by the owner or operator. These records shall be updated as necessary to describe current operation and equipment. The records shall be retained as a readily accessible location at the source for a minimum of two years after the control device is permanently shutdown.

1) Detailed schematics, design specifications, and piping and instrumentation diagrams;

2) The dates and description of any changes in design specifications;

3) A description of the parameter or parameters monitored and recorded as required in subsection (f)(1) to ensure that the control devices are operated and maintained in conformance with their design and an explanation why that parameter (or parameters) was selected for monitoring.

e) The control device shall be operated at all times when emissions may be vented to it.

f) Owners and operators of control devices used to comply with this Subpart shall monitor each control device to ensure that the control device is operated and maintained in conformance with its designs at all times that emissions may be vented to it. This monitoring shall be conducted in accordance with Section 219.429(d)(3). The records prepared as part of this monitoring activity shall include the dates of startup and shutdown of control devices and identify periods when the devices are not operated as designed, including periods when a flare pilot light does not have a flame.

g) The requirements of subsections (d), (e) and (f) shall not apply to a combustion device located at the source used for disposal of purged process fluid which is subject to the Burning of Hazardous Waste in Boilers and Industrials Furnaces (BIF) rules, 40 CFR 260, 261, 264, 265, 266 and 270, or which is subject to the Resource Conservation and Recovery Act (RCRA) rules, 35 Ill. Adm. Code Parts 703, 720, 721, 724, 725 and 726. The owner or operator of such cumbustion device shall satisfy applicable provisions of the RCRA or BIF rules.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.431 Applicability

a) The provisions of Sections 219.431 through 219.436 of this Subpart shall apply to every owner or operator of any chemical manufacturing process unit that manufactures, as a primary product, one or more of the chemicals listed in Appendix A of this Part and that chemical manufacturing process unit causes or allows any reactor or distillation unit, either individually or in tandem, to discharge one or more process vent streams either directly to the atmosphere or to a recovery system.

b) Notwithstanding subsection (a) of this Section, the control requirements set forth within Section 219.432 of this Subpart shall not apply to the following:

1) Any process vent stream with a total resource effectiveness (TRE) index value greater than 1.0. However, such process vent stream remains subject to the performance testing requirements contained in Section 219.433 of this Subpart and the reporting and recordkeeping requirements contained in Section 219.435 of this Subpart;

2) Any reactor or distillation unit that is designed and operated as a batch operation;

3) Any reactor or distillation unit that is part of a polymer manufacturing operation;

4) Any reactor or distillation unit that is part of the chemical manufacturing

process unit with a total design capacity of less than 1 gigagram (1,100 tons) per year for all chemicals produced, as a primary product, within that process unit. However, such operations remain subject to the reporting and recordkeeping requirements contained in Section 219.435(d) of this Subpart; or

5) Any vent stream with a flow rate less than 0.0085 scm/min or a total VOM concentration of less than 500 ppmv, less methane and ethane, as measured by Method 18, or a concentration of VOM of less than 250 ppmv as measured by Method 25A. However, such operations remain subject to the performance testing requirement listed in Section 219.433 of this Subpart, as well as the reporting and recordkeeping requirements contained in Section 219.435 of this Subpart; or

6) Any reactor or distillation unit included within an Early Reduction Program, as specified in 40 CFR 63, and published in 57 Fed. Reg. 61970 (October 22, 1993), evidenced by a timely enforceable commitment approved by USEPA.

(Source: Amended at 19 Ill. Reg. 14462, effective May 9, 1995)

Section 219.432 Control Requirements

a) Every owner or operator of a source subject to the requirements of this Subpart, as determined by Section 219.431 of this Subpart, shall either:

1) Reduce emissions of VOM, less methane or ethane, by 98 weight-percent, or to 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent;

2) If a boiler or process heater is used to comply with this Subpart, the vent stream shall be introduced into the flame zone of the boiler or process heater; or

3) If a flare is used to comply with this Subpart it shall comply with the requirements of 40 CFR 60.18, incorporated by reference at Section 219.112 of this Part. The flare operation requirements of 40 CFR 60.18 do not apply if a process, not subject to this Subpart, vents an emergency relief discharge into a common flare header and causes the flare servicing the process subject to this Subpart to not comply with one or more of the provisions of 40 CFR 60.18.

b) Notwithstanding subsection (a) or (c) of this Section, and subject to subsection (b)(2) of this Section:

1) No owner or operator of a source subject to Section 219.432 of this Subpart shall cause or allow VOM to be emitted through an existing control device unless the control device is operated to achieve:

A) 90 percent control of the VOM emissions vented to it; or

B) VOM emissions concentration of less than 50 ppmv, on a dry basis.

2) Any existing control device subject to subsection (a) of this Section is required to meet the 98 percent emissions limit set forth in subsection (a)(1) upon the earlier to occur of the date the control device is replaced for any reason, including, but not limited to, normal maintenance, malfunction, accident, and obsolescence, or December 31, 1999. A control device is considered to be replaced when:

A) All of the device is replaced; or

B) When the cost to repair the device or the cost to replace part of the device exceeds 50 percent of the cost of replacing the entire device with a device that complies with the 98% emissions limitation in subsection (a)(1) of this Section.

c) For each individual vent stream within a chemical manufacturing process unit with a TRE index value greater than 1.0, the owner or operator shall maintain process vent stream parameters that retain a calculated TRE index value greater than 1.0 by means of recovery. Any recovery device shall have as its primary purpose the capture of chemicals for use, reuse, or sale. The TRE index value shall be calculated at the outlet of the final recovery device.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.433 Performance and Testing Requirements

a) For the purpose of demonstrating compliance with the TRE index value in Section 219.432(c) of this Subpart, an engineering assessment shall be made to determine process vent stream flow rate, net heating value, and VOM emission rate for the representative operating conditions expected to yield the lowest TRE index value. The source shall also calculate the TRE index values pursuant to the equations contained within Appendix G (b)(1) of this Part.

1) If the TRE index value calculated using such engineering assessment and the TRE equation in Appendix G (b)(1) of this Part is greater than 4.0, then the owner or operator is exempt from performing the measurements specified in Appendix G (a) of this Part.

2) If the TRE index value calculated using such engineering assessment and the TRE equation in Appendix G (b)(1) of this Part is less than or equal to 4.0, then the owner or operator shall perform the measurements specified in Appendix G (a) of this Part. An owner or operator of a source may, in the alternative, elect to comply with the control requirements specified in

Section 219.432 of this Subpart rather than performing the measurements in Appendix G (a) of this Part.

3) An engineering assessment shall include, but is not limited to, the following:

A) Previous test results, provided the tests are representative of current operating practices at the chemical manufacturing process unit;

B) Bench-scale or pilot-scale test data of the process under representative operating conditions;

C) Maximum flow rate, as stated within a permit limit, applicable to the process vent;

D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to, the following:

i) Use of material balances based on process stoichiometry to estimate maximum VOM concentrations;

ii) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities;

iii) Estimation of VOM concentrations based on saturation conditions; and

iv) Estimation of maximum expected net heating value based on the stream concentration of each organic compound, or, alternatively, as if all VOM in the stream were the compound with the highest heating value.

E) All data, assumptions, and procedures used in the engineering assessment shall be documented.

b) For the purpose of demonstrating compliance with the control requirements in Section 219.432 of this Subpart, the chemical manufacturing process unit shall be run at representative operating conditions and flow rates during any performance test.

c) The following methods in 40 CFR 60, incorporated by reference at Section 219.112 of this Part, shall be used to demonstrate compliance with the reduction efficiency requirement listed in Section 219.432(a)(1) of this Subpart.

1) Method 1 or 1A, incorporated by reference at Section 219.112 of this Part,

as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or VOM content, less methane and ethane, reduction efficiency shall be located after the last recovery device but prior to the inlet of the control device, prior to any dilution of the process vent stream, and prior to release to the atmosphere.

2) Method 2, 2A, 2C, or 2D, incorporated by reference at Section 219.112 of this Part, as appropriate, for determination of gas stream volumetric flow rate.

3) The emission rate correction factor, integrated sampling, and analysis procedure of Method 3, incorporated by reference at Section 219.112 of this Part, shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purpose of determining compliance with the 20 ppmv limitation. The sampling site for determining compliance with the 20 ppmv limitation shall be the same site used for the VOM samples, and samples shall be taken at the same time that the VOM samples are taken. The VOM concentration corrected to 3 percent oxygen (C_c) shall be computed using the following formula:

$$C_c = C_{VOM} \times \frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c = Concentration of VOM (minus methane and ethane) corrected to 3 percent O_2, dry basis, ppmv

C_{VOM} = Concentration of VOM (minus methane and ethane), dry basis, ppmv.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percent by volume.

4) Method 18, incorporated by reference at Section 219.112 of this Part, to determine the concentration of VOM, less methane and ethane, at the outlet of the control device when determining compliance with the 20 ppmv limitation in Section 219.432(a)(1) of this Subpart, or at both the control device inlet and outlet when the reduction efficiency of the control device is to be determined.

A) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used then the samples shall be taken at 15-minute intervals.

B) The emission reduction (R) of VOM, less methane and ethane, shall be determined using the following formula:

$$R = \frac{(E_i - E_o)}{E_i} \times 100$$

where:

R =	Emission reduction, percent by weight.
E_i =	Mass rate of VOM (minus methane and ethane) entering the control device, kg VOM/hr.
E_o =	Mass rate of VOM, less methane and ethane discharged to the atmosphere, kg VOM/hr.

C) The mass rates of VOM (E_i, E_o) shall be computed using the following formula:

$$E_i = K_2 \left(\sum_{j=1}^{n} C_{ij}M_{ij}\right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^{n} C_{oj}M_{oj}\right) Q_o$$

where:

C_{ij}, C_{oj} =	Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppmv.
M_{ij}, M_{oj} =	Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, grams per gram-mole.
Q_i, Q_o =	Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry scm/min.
K_2 =	2.494×10^{-6} (liters per minute)(gram-mole per scm)(kg/g)(min/hr), where standard temperature for (gram-mole per scm) is 20°C.

D) The representative VOM concentration (C_{VOM}) is the sum of each of the individual components of VOM (C_j) and shall be computed for each run using the following:

$$C_{VOM} = \sum_{j=1}^{n} C_j$$

where:

C_{VOM} = Concentration of VOM (minus methane and ethane), dry basis, ppmv.

C_j = Concentration of sample component "j", dry basis, ppmv.

n = Number of components in the sample.

5) When a boiler or process heater with a design heat input capacity of 44 megawatts or greater, or a boiler or process heater into which the process vent stream is introduced with the primary fuel, is used to comply with the control requirements, an initial performance test is not required.

d) When a flare is used to comply with the control requirements of this rule, the flare shall comply with the requirements of 40 CFR 60.18, incorporated by reference at Section 219.112 of this Part.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.434 Monitoring Requirements

a) The owner or operator of a source subject to the control requirements in Section 219.432 of this Subpart that uses an incinerator to comply with the VOM emission limitation specified in Section 219.432(a)(1) shall install, calibrate, maintain, and operate, according to manufacturer's specifications, a temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature measured expressed in degress Celsius, or ±0.5 °C, whichever is greater.

1) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox.

2) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

b) The owner or operator of a source that uses a flare to comply with Section 219.432(a)(2) of this Subpart shall install, calibrate, maintain and operate, according to manufacturer's specifications, a heat-sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate continuous presence of a flame.

c) The owner or operator of a source that uses a boiler or process heater with a design heat input capacity less than 44 megawatts to comply with Section 219.432(a)(1) of this Subpart shall install, calibrate, maintain and operate, according to the manufacturer's specifications, a temperature monitoring device in the firebox. The monitoring device shall be equipped with a continuous recorder with an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 °C, whichever is greater. Any boiler or process heater in which all vent streams are introduced with primary fuel is exempt from this requirement.

d) The owner or operator of a process vent with a TRE index value of 4.0 or less that uses one or more product recovery devices shall install either an organic monitoring device equipped with a continuous recorder or the monitoring equipment specified in subsection (d)(1), (d)(2), (d)(3) or (d)(4) of this Section, depending on the type of recovery device used. All monitoring equipment shall be installed, calibrated and maintained according to the manufacturer's specifications.

1) Where an absorber is the final recovery device in the recovery system, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each equipped with a continuous recorder, shall be used.

2) Where a condenser is the final recovery device in the recovery system, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

3) Where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration steam flow monitoring device having an accuracy of ±10 percent, capable of recording the total regeneration steam mass flow for

4) each regeneration cycle; and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius of ±0.5 °C, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle.

5) Where a scrubber is used with an incinerator, boiler, or, in the case of halogenated vent streams, a process heater, the following monitoring equipment is required for the scrubber:

A) A pH monitoring device equipped with a continuous recorder to monitor the pH of the scrubber effluent; and

B) Flow meters equipped with a continuous recorder at the scrubber influent for liquid flow and the scrubber inlet for gas stream flow.

e) The owner or operator of a process vent using a vent system that contains bypass lines capable of diverting a vent stream away from the control device associated with a process vent shall comply with either (e)(1) or (e)(2) of this Section. Equipment needed for safety purposes, including, but not limited to, pressure relief devices, are not subject to this subsection.

1) The owner or operator shall install, calibrate, maintain and operate a flow indicator that provides a record of vent stream flow at least once every 15 minutes. The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

2) The owner or operator shall secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

f) The owner or operator of a process vent may monitor by an equivalent alternative means or parameters other than those listed in subsections (a) through (d) of this Section. Any equivalent alternative shall be approved by the Agency and USEPA, and contained in the source's operating permit as federally enforceable permit conditions.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.435 Recordkeeping and Reporting Requirements

a) Every owner or operator of a reactor or distillation unit with a TRE index value of 4.0 or less shall keep records, for a minimum of 3 years, of the following parameters measured during a performance test or TRE determination required under Section 219.433 of this Subpart, and required to be monitored under Section 219.434 of this Subpart.

1) Every owner or operator of a source that seeks to demonstrate compliance with Section 219.432(a)(1) of this Subpart through the use of either a thermal or catalytic incinerator shall maintain records of the following:

A) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing; and

B) The percent reduction of VOM determined as specified in Section 219.433(c) of this Subpart achieved by the incinerator, or the concentration of VOM (ppmv, by compound) determined as specified in Section 219.433(c) of this Subpart at the outlet of the control device, on a dry basis, corrected to 3 percent oxygen.

2) Every owner or operator of a source that seeks to demonstrate compliance with Section 219.432(a)(1) of this Subpart through the use of a boiler or process heater shall maintain the records described below. Any boiler or process heater in which all vent streams are introduced with primary fuel are exempt from these requirements.

A) A description of the location at which the vent stream is introduced into the boiler or process heater; and

B) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 megawatt measured at least every 15 minutes and averaged over the same time period of the performance testing.

3) Every owner or operator of a source that seeks to demonstrate compliance with Section 219.432(a)(2) of this Subpart through use of a smokeless flare, or flare design (i.e., steam-assisted, air-assisted, or nonassisted shall maintain records of all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

4) Every owner or operator of a source that seeks to demonstrate compliance with Section 219.432(b) of this Subpart shall maintain records of the following:

A) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter) which is a measure of the degree of absorbing liquid saturation, if approved by the Agency and USEPA, and average exit temperature of the absorbing liquid measured at least every 15 minutes and averaged over the same time period as the performance testing (both measured while the vent stream is normally routed and constituted);

B) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period as the performance testing while the vent stream is normally routed and constituted;

C) Where a carbon absorber is the final recovery device in the recovery system, the total steam mass or volumetric flow measured at least every 15 minutes and averaged over the same time period as the performance testing (full carbon bed cycle), the temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s)), and duration of the carbon bed steaming cycle (all measured while the vent stream is normally routed and constituted);

D) As an alternative to subsection (a)(4)(A), (a)(4)(B) or (a)(4)(C) of this Section, the concentration level or reading indicated by the organic monitoring device at the outlet of the absorber, condenser, or carbon absorber, measured at least every 15 minutes and averaged over the same time period as the performance testing (measured while the vent stream is normally routed and constituted); or

E) All measurements and calculations performed to determine the flow rate, VOM concentration, heating value, and TRE index value of the vent stream.

b) Every owner or operator of a reactor or distillation unit with a TRE index value of less than 4.0 shall be subject to the exceedance reporting requirements of the draft Enhanced Monitoring Guidelines as published at 58 Fed. Reg. 54648 (October 22, 1993).

c) Every owner or operator of a source seeking to comply with Section 219.432(b) of this Subpart shall maintain records of the following:

1) Any changes in production capacity, feedstock type, catalyst type, or of any replacement, removal, or addition of recovery equipment or reactors and distillation units; and

2) Any recalculation of the flow rate, VOM concentration, or TRE index value calculated according to subsection (c) of Appendix G of this Part.

d) Every owner or operator of a source claiming a design capacity of less than 1 gigagram (1,100 tons) per year, as contained in Section 219.431(b) of this Subpart, shall maintain records of the design capacity or any changes in equipment or operations that may affect the design capacity.

e) Every owner or operator of a source claiming a vent stream flow rate or vent stream concentration exemption level, as contained in Section 219.431(b)(5) of this Subpart, shall maintain records to indicate that the stream flow rate is less than 0.0085 scm/min or the vent stream concentration is less than 500 ppmv.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.436 Compliance Date

Every owner or operator of an source subject to Sections 219.431, 219.432, 219.433, 219.434 or 219.435 of this Subpart shall comply with its standards, limitations and mandates by March 15, 1996.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

SUBPART R: PETROLEUM REFINING AND RELATED INDUSTRIES; ASPHALT MATERIALS

Section 219.441 Petroleum Refinery Waste Gas Disposal

a) Except as provided in subsection (b) or (c) of this Section, no person shall cause or allow the discharge of organic materials in excess of 100 ppm equivalent methane (molecular weight 16.0) into the atmosphere from:

   1) Any catalyst regenerator of a petroleum cracking system; or

   2) Any petroleum fluid coker; or

   3) Any other waste gas stream from any petroleum or petrochemical manufacturing process.

b) Exception. Existing sources subject to subsection (a)(3) of this Section may, alternatively, at their election, comply with the organic material emission limitations imposed by 35 Ill. Adm. Code 219.301 or 219.302; provided, however, that there shall be no increase in emissions from such sources above the level of emissions in existence on May 3, 1979.

c) New Sources. Sources subject to subsection (a)(3) of this Section, construction of which commenced on or after January 1, 1977, may, at their election, comply with the following emission limitations:

   1) A maximum of eight pounds per hour of organic material; or

   2) Emission of organic material in excess of the limitation of subsection (c)(1) of this Section is allowable if such emissions are controlled by air pollution control methods or equipment approved by the Agency capable of reducing by 85 percent or more the uncontrolled organic material that would otherwise be emitted to the atmosphere. Such methods or equipment must be approved by the Agency and approved by the USEPA as a SIP revision.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.442 Vacuum Producing Systems

No owner or operator of a petroleum refinery shall cause or allow the operation of any vacuum producing system unless the condensers, hot wells and accumulators of any such system are equipped with vapor loss control equipment including, but not limited to, piping, valves, flame arrestors and hot well covers, to vent any volatile organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K(70°F) to a heater, fire box, flare, refinery fuel gas system, or other equipment or system of equal emission control as approved by the Agency and approved by the USEPA as a SIP revision. This Section shall not apply to vacuum producing systems on lube units.

Section 219.443 Wastewater (Oil/Water) Separator

No owner or operator of a petroleum refinery shall operate any wastewater (oil/water) separator at a petroleum refinery unless the separator is equipped with air pollution control equipment capable of reducing by 85 percent or more the uncontrolled organic material emitted to the atmosphere. If no odor nuisance exists, the limitation of this Section shall not apply if the vapor pressure of the organic material is below 10.34 kPa (1.5 psia) at 294.3°K (70°F) at all times.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.444 Process Unit Turnarounds

a) No owner or operator of a petroleum refinery shall cause or allow a refinery process unit turnaround except in compliance with an operating procedure as approved by the Agency.

b) Unless a procedure was already on file with the Agency as part of an approved operating permit no later than November 1, 1979, the owner or operator of a petroleum refinery shall submit to the Agency for approval a detailed procedure for reducing emissions of volatile organic material during refinery process unit turnarounds from organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K (70°F). The Agency shall not approve the procedure unless it provides for:

   1) Depressurization of the refinery process unit or vessel to a flare, refinery fuel gas system, or other equipment or system of equal emission control, as approved by the Agency and approved by the USEPA as a SIP revision, until the internal pressure from the vessel or unit is less than 5.0 psig before allowing the vessel to be vented to the atmosphere;

   2) Recordkeeping of the following items:

      A) Each date that a refinery unit or vessel is shut down; and

      B) The total estimated quantity of volatile organic material emitted to the atmosphere and the duration of the emission in hours.

Section 219.445 Leaks: General Requirements

The owner or operator of a petroleum refinery shall:

a) Develop a monitoring program plan consistent with the provisions of Section 219.446 of this Part;

b) Conduct a monitoring program consistent with the provisions of Section 219.447 of this Part;

c) Record all leaking components which have a volatile organic material concentration exceeding 10,000 ppm consistent with the provisions of Section 219.448 of this Part;

d) Identify each component consistent with the monitoring program plan submitted pursuant to Section 219.446 of this Part;

e) Repair and retest the leaking components as soon as possible within 22 days after the leak is found, but no later than June 1 for the purposes of Section 219.447(a)(1) of this Part, unless the leaking components cannot be repaired until the unit is shut down for turnaround; and

f) Report to the Agency consistent with the provisions of Section 219.449 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.446 Monitoring Program Plan for Leaks

The owner or operator of a petroleum refinery shall prepare a monitoring program plan which contains, at a minimum:

a) An identification of all refinery components and the period in which each will be monitored pursuant to Section 219.447 of this Part;

b) The format for the monitoring log required by Section 219.448 of this Part;

c) A description of the monitoring equipment to be used pursuant to Section 219.447 of this Part; and

d) A description of the methods to be used to identify all pipeline valves, pressure relief valves in gaseous service and all leaking components such that they are obvious to both refinery personnel performing monitoring and Agency personnel performing inspections.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.447 Monitoring Program for Leaks

a) The owner or operator of a petroleum refinery subject to Section 219.445 of this Part shall, for the purpose of detecting leaks, conduct a component monitoring program consistent with the following provisions:

1) Test once between March 1 and June 1 of each year, by methods referenced in Section 219.105(g) of this Part, all pump seals, pipeline valves in liquid service and process drains;

2) Test once each quarter of each calendar year, by methods referenced in Section 219.105(g) of this Part, all pressure relief valves in gaseous service, pipeline valves in gaseous service and compressor seals;

3) Inaccessible valves may be tested once each calendar year instead of once each quarter of each calendar year;

4) Observe visually all pump seals weekly;

5) Test immediately any pump seal from which liquids are observed dripping;

6) Test any relief valve within 24 hours after it has vented to the atmosphere; and

7) Test immediately after repair any component that was found leaking.

b) Storage tank valves and pressure relief devices connected to an operating flare header or vapor recovery device are exempt from the monitoring requirements in subsection (a) of this Section.

c) The Agency may require more frequent monitoring than would otherwise be required by subsection (a) of this Section for components which are demonstrated to have a history of leaking.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.448 Recordkeeping for Leaks

a) The owner or operator of a petroleum refinery shall maintain a leaking components monitoring log which shall contain, at a minimum, the following information:

1) The name of the process unit where the component is located;

2) The type of component (e.g., valve, seal);

3) The identification number of the component;

4) The date on which a leaking component is discovered;

5) The date on which a leaking component is repaired;

6) The date and instrument reading of the recheck procedure after a leaking component is repaired;

7) A record of the calibration of the monitoring instrument;

8) The identification number of leaking components which cannot be repaired until turnaround; and

9) The total number of components inspected and the total number of components found leaking during that monitoring period.

b) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two years after the date on which the record was made or the report prepared.

c) Copies of the monitoring log shall be made available to the Agency, upon verbal or written request, at any reasonable time.

Section 219.449 Reporting for Leaks

The owner or operator of a petroleum refinery shall:

a) Submit a report to the Agency prior to the 1st day of both July and September listing all leaking components identified pursuant to Section 219.447 of this Part but not repaired within 22 days, all leaking components awaiting unit turnaround, the total number of components inspected and the total number of components found leaking;

b) Submit a signed statement with the report attesting that all monitoring and repairs were performed as required under Sections 219.445 through 219.448 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.450 Alternative Program for Leaks

The Agency may approve an alternative program of monitoring, recordkeeping or reporting to that prescribed in Sections 219.446 through 219.449 of this Part upon a demonstration by the owner or operator of a petroleum refinery that the alternative program will provide refinery, Agency and USEPA personnel with an equivalent ability to identify and repair leaking components. Any alternative program can be allowed only if approved by the USEPA as a SIP revision.

(Source: Amended at 17 Ill Reg. 16918, effective September 27, 1993)

Section 219.451 Sealing Device Requirements

Except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing volatile organic materials unless the pipe or line is sealed with a second valve, blind flange, plug, cap or other sealing device. The sealing device may be removed only when a sample is being taken or during maintenance operations.

Section 219.452 Compliance Schedule for Leaks

The owner or operator of a petroleum refinery shall adhere to the increments of progress contained in the following schedule:

a) Submit to the Agency a monitoring program consistent with Section 219.446 of this Part prior to July 1, 1991 or a date consistent with Section 219.106 of this Part.

b) Submit to the Agency the first monitoring report pursuant to Section 219.449 of this Part prior to August 1, 1991 or a date consistent with Section 219.106 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART S: RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS

Section 219.461 Manufacture of Pneumatic Rubber Tires

The owner or operator of an undertread cementing, treadend cementing or bead dipping operation at a pneumatic rubber tire manufacturing source shall install and operate:

a) A capture system, with minimum capture efficiency of 65 percent by weight of VOM for treadend cementing or bead dipping operations and a capture system with a minimum capture efficiency of 55.5 percent by weight of VOM for undertread cementing; and

b) A control device that meets the requirements of one of the following:

1) A carbon adsorption system designed and operated in a manner such that there is at least a 90 percent removal of VOM by weight from the gases ducted to the control device;

2) An afterburning system that oxidizes at least 90 percent of the captured nonmethane VOM (VOM measured as total combustible carbon) to carbon dioxide and water; and

3) An alternative VOM emission reduction system demonstrated to have at least a 90 percent overall reduction efficiency and approved by the Agency and approved by the USEPA.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.462 Green Tire Spraying Operations

The owner or operator of a green tire spraying operation at a pneumatic rubber tire manufacturing source shall:

a) Install and operate:

   1) A capture system with a minimum capture efficiency of 90 percent by weight of VOM; and

   2) A control device that meets the requirements of one of the following:

      A) A carbon adsorption system designed and operated in a manner such that there is at least 90 percent removal of VOM by weight from the gases ducted to the control device;

      B) An afterburning system that oxidizes at least 90 percent of the captured nonmethane VOM (measured as total combustible carbon) to carbon dioxide and water; or

      C) An alternative VOM emission reduction system demonstrated to have at least a 90 percent overall reduction efficiency approved by the Agency and approved by the USEPA as a SIP revision.

b) Substitute for the normal solvent-based mold release compound water-based sprays containing:

   1) No more than five percent by volume of VOM as applied for the inside of tires;

   2) No more than ten percent by volume of VOM as applied for the outside of tires.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.463 Alternative Emission Reduction Systems

In lieu of complying with Section 219.461 or 219.462 of this Part, the owner or operator of an source may utilize an alternative volatile organic emission reduction system, including an alternative production process, which is demonstrated to be equivalent to Section 219.461 or 219.462 of this Part on the basis of emissions of volatile organic material. A treadend cementing operation shall be considered equivalent to Section 219.461 or 219.462 of this Part for the purposes of this Section if the total volatile organic emission from such operation is 10 grams or less per tire.

(Source: Amended at 17 Ill. Reg 16918, effective September 27, 1993)

Section 219.464 Emission Testing

a) Upon a reasonable request by the Agency, the owner or operator of a VOM source required to comply with a limit of Sections 219.461 through 219.464 of this Part shall conduct emissions testing, at such person's own expense, to demonstrate compliance.

b) A person planning to conduct a VOM emission test to demonstrate compliance shall notify the Agency of that intent not less than 30 days before the planned initiation of the tests so the Agency may observe the test.

(Source: Amended at 17 Ill Reg 16918, effective September 27, 1993)

SUBPART T: PHARMACEUTICAL MANUFACTURING

Section 219.480 Applicability

a) The rules of this Subpart, except for Sections 219.483 through 219.485 of this Part, apply to all emission units of VOM, including but not limited to reactors, distillation units, dryers, storage tanks for VOL, equipment for the transfer of VOL, filters, crystallizers, washers, laboratory hoods, pharmaceutical coating operations, mixing operations and centrifuges used in manufacturing, including packaging, of pharmaceuticals, and emitting more than 6.8 kg/day (15 lbs/day) and more than 2,268 kg/year (2.5 tons/year) of VOM. If such emission unit emits less than 2,268 kg/year (2.5 tons/year) of VOM, the requirements of this Subpart still apply to the emission unit if VOM emissions from the emission unit exceed 45.4 kg/day (100 lbs/day).

b) Sections 219.483 through 219.485 of this Part apply to a source having one or more emission units that:

1) Are used to manufacture pharmaceuticals, and

2) Emit more than 6.8 kg/day (15 lbs/day) of VOM and more than 2,268 kg/year (2.5 tons/year) of VOM, or, if less than 2,268 kg/year (2.5 tons/year), these Sections still apply if emissions from one or more sources exceed 45.4 kg/day (100 lbs/day).

c) No owner or operator shall violate any condition in a permit when the condition results in exclusion of an emission unit from this Subpart.

d) Any pharmaceutical manufacturing source that becomes subject to the provisions of this Subpart at any time shall remain subject to the provisions of this Subpart at all times.

e) Emissions subject to this Subpart shall be controlled at all times consistent with the requirements set forth in this Subpart.

f) Any control device required pursuant to this Subpart shall be operated at all times when the source it is controlling is operated.

g) Determinations of daily and annual emissions for purposes of this Section shall be made using both data on the hourly emission rate (or the emissions per unit of throughput) and appropriate daily and annual data from records of emission unit operation (or material throughput or material consumption data). In the absence of representative test data pursuant to Section 219.487 of this Part for the hourly emission rate (or the emissions per unit of throughput), such items shall be calculated using engineering calculations, including the methods described in Appendix B of "Control of Volatile Organic Emissions from Manufacturing of Synthesized Pharmaceutical Products" (EPA-450/2-78-029), incorporated by reference in Section 219.112 of this Part.

(This subsection shall not affect the Agency's or the USEPA's authority to require emission tests to be performed pursuant to Section 219.487 of this Part.)

h) Equipment and operations emitting VOM at a source subject to subsection (a) or (c) of this Section and used to produce pharmaceutical products or a pharmaceutical-like product such as a hormone, enzyme, or antibiotic, shall be deemed to be engaged in the manufacture of pharmaceuticals for the purposes of this Subpart.

(Source: Amended at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.481 Control of Reactors, Distillation Units, Crystallizers, Centrifuges and Vacuum Dryers

a) The owner or operator shall equip all reactors, distillation units, crystallizers, centrifuges and vacuum dryers that are used to manufacture pharmaceuticals with surface condensers or other air pollution control equipment listed in subsection (b) of this Section. If a surface condenser is used, it shall be operated such that the condenser outlet gas temperature does not exceed:

1) 248.2°K (-13°F) when condensing VOM of vapor pressure greater than 40.0 kPa (5.8 psi) at 294.3°K (70°F), or

2) 258.2°K (5°F) when condensing VOM of vapor pressure greater than 20.0 kPa (2.9 psi) at 294.3°K (70°F), or

3) 273.2°K (32°F when condensing VOM of vapor pressure greater than 10.0 kPa (1.5 psi) at 294.3°K (70°F), or

4) 283.2°K (50°F) when condensing VOM of vapor pressure greater than 7.0 kPa (1.0 psi) at 294.3°K (70°F), or

5) 298.2°K (77°F) when condensing VOM of vapor pressure greater than 3.45 kPa (0.5 psi) at 294.3°K (70°F).

b) If a scrubber, carbon adsorber, thermal afterburner, catalytic afterburner, or other air pollution control equipment other than a surface condenser is used, such equipment shall provide a reduction in the emissions of VOM of 90 percent or more.

c) The owner or operator shall enclose all centrifuges used to manufacture pharmaceuticals and that have an exposed VOL surface, where the VOM in the VOL has a vapor pressure of 3.45 kPa (0.5 psi) or more at 294.3°K (70°F), except as production, sampling, maintenance, or inspection procedures require operator access.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.482 Control of Air Dryers, Production Equipment Exhaust Systems and Filters

a) The owner or operator of an air dryer or production equipment exhaust system used to manufacture pharmaceuticals shall control the emissions of VOM from such emission units by air pollution control equipment which reduces by 90 percent or more the VOM that would otherwise be emitted into the atmosphere.

b) The owner or operator shall enclose all rotary vacuum filters and other filters used to manufacture pharmaceuticals and that have an exposed VOL surface, where the VOM in the VOL has a vapor pressure of 3.45 kPa (0.5 psi) or more at 294.3°K (70°F), except as production, sampling, maintenance, or inspection procedures require operator access.

(Source: Amended at 17 Ill Reg 16918, effective September 27, 1993)

Section 219.483 Material Storage and Transfer

The owner or operator of a pharmaceutical manufacturing source shall:

a) Provide a vapor balance system that is at least 90 percent effective in reducing VOM emissions from truck or railcar deliveries to storage tanks with capacities equal to or greater than 7.57 m^3 (2,000 gal) that store VOL with vapor pressures greater than 28.0 kPa (4.1 psi) at 294.3°K (70°F), and

b) Install, operate, and maintain pressure/vacuum conservation vents set at 0.2 kPa (0.03 psi) or greater on all storage tanks that store VOL with vapor pressures greater than 10 kPa (1.5 psi) at 294.3°K (70°F).

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.484 In-Process Tanks

The owner or operator shall install covers on all in-process tanks used to manufacture pharmaceuticals and containing a VOL at any time. These covers must remain closed, except as production, sampling, maintenance or inspection procedures require operator access.

Section 219.485 Leaks

The owner or operator of a pharmaceutical manufacturing source shall repair any component from which a leak of VOL can be observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found. If the leaking component cannot be repaired until the process unit is shut down, the leaking component must then be repaired before the unit is restarted.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.486 Other Emission Units

The owner or operator of a washer, laboratory hood, tablet coating operation, mixing operation or any other process emission unit not subject to Sections 219.481 through 219.485 of this Part, and used to manufacture pharmaceuticals shall control the emissions of VOM from such emission units by:

a) Air pollution control equipment which reduces by 81 percent or more the VOM that would otherwise be emitted to the atmosphere, or

b) A surface condenser which captures all the VOM which would otherwise be emitted to the atmosphere and which meets the requirements of Section 219.481(a) of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective Sept. 27, 1993)

Section 219.487 Testing

a) Upon request by the Agency or the USEPA, the owner or operator of any VOM source subject to this Subpart or exempt from this Subpart by virtue of the provisions of Section 219.480 of this Part shall, at his own expense, demonstrate compliance to the Agency and the USEPA by the methods or procedures listed in Section 219.105(f)(1) of this Part.

b) A person planning to conduct a VOM emissions test to demonstrate compliance with this Subpart shall notify the Agency and the USEPA of that intent not less than 30 calendar days before the planned initiation of the test.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.488 Monitoring for Air Pollution Control Equipment

a) At a minimum, continuous monitors for the following parameters shall be installed on air pollution control equipment used to control sources subject to this Subpart:

1) Destruction device combustion temperature.

2) Temperature rise across a catalytic afterburner bed.

3) VOM concentration on a carbon adsorption unit to determine breakthrough.

4) Outlet gas temperature of a refrigerated condenser.

5) Temperature of a non-refrigerated condenser coolant supply system.

b) Each monitor shall be equipped with a recording device.

c) Each monitor shall be calibrated quarterly.

d) Each monitor shall operate at all times while the associated control equipment is operating.

Section 219.489 Recordkeeping for Air Pollution Control Equipment

a) The owner or operator of a pharmaceutical manufacturing source shall maintain the following records:

1) Parameters listed in Section 219.488(a) of this Part shall be recorded.

2) For emission units subject to Section 219.481 of this Part, the vapor pressure of VOM being controlled shall be recorded for every process.

b) For any leak subject to Section 219.485 of this Part which cannot be readily repaired within one hour after detection, the following records shall be kept:

1) The name of the leaking equipment,

2) The date and time the leak is detected,

3) The action taken to repair the leak, and

4) The date and time the leak is repaired.

c) The following records shall be kept for emission units subject to Section 219.484 of this Part which contain VOL:

1) For maintenance and inspection:

A) The date and time each cover is opened,

B) The length of time the cover remains open, and

C) The reason why the cover is opened.

2) For production and sampling, detailed written procedures or manufacturing directions specifying the circumstances under which covers may be opened and the procedures for opening covers.

d) For each emission unit used in the manufacture of pharmaceuticals for which the owner or operator of a pharmaceutical manufacturing source claims emission standards are not applicable, because the emissions are below the applicability cutoffs in Section 219.480(a) or 219.480(b) of this Part, the owner or operator shall:

1) Maintain a demonstration including detailed engineering calculations of the maximum daily and annual emissions for each such emission unit showing that the emissions are below the applicability cutoffs in Section 219.480(a) or 219.480(b) of this Part, as appropriate, for the current and prior calendar years;

2) Maintain appropriate operating records for each such emission source to identify whether the applicability cutoffs in Section 219.480(a) or 219.480(b) of this Part, as appropriate, are ever exceeded; and

3) Provide written notification to the Agency and the USEPA within 30 days of a determination that such an emission unit has exceeded the applicability cutoffs in Section 219.480(a) or 219.480(b) of this Part, as appropriate.

e) Records required under subsection (a) of this Section shall be maintained by the owner or operator for a minimum of two years after the date on which they are made.

f) Copies of the records shall be made available to the Agency or the USEPA upon verbal or written request.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART V: BATCH OPERATIONS AND AIR OXIDATION PROCESSES

Section 219.500 Applicability for Batch Operations

a) The control requirements set forth in Section 219.501 of this Subpart shall apply to process vents associated with batch operations at sources identified by any of the following four-digit standard industrial classification ("SIC") codes, as defined in the 1987 edition of the Federal Standard Industrial Classification Manual: SIC 2821, 2833, 2834, 2861, 2865, 2869, and 2879.

b) The requirements of Sections 219.500 through 219.506 shall not apply to:

1) Any emission unit included within the category specified in 35 Ill. Adm. Code 219, Subpart B or T;

2) Any emission unit included within the category specified in Sections 219.520 through 219.527 of this Subpart; and

3) Any emission unit included within an Early Reduction Program, as specified in 40 CFR Part 63, and published in 57 Fed. Reg. 61970 (December 29, 1992), evidenced by a timely enforceable commitment approved by USEPA.

c) The following single unit operations and batch process trains are subject to this Subpart but are considered to be de minimis and are, therefore, exempt from the control requirements of Section 219.501 of this Subpart. However, the recordkeeping and reporting requirements in Section 219.505 of this Subpart shall apply to such de minimis single unit operations and batch process trains:

1) Within a batch operation, any single unit operation with uncontrolled total annual mass emissions of less than or equal to 500 lb/yr of VOM. Such single unit operations are also excluded from the calculation of the total annual mass emissions for a batch process train. If the uncontrolled total annual mass emissions from such exempt single unit operation exceed 500 lb/yr of VOM in any subsequent year, the source shall calculate applicability in accordance with subsection (d) of this Section for both the individual single unit operation and the batch process train containing the single unit operation; and

2) Any batch process train containing process vents that have, in the aggregate, uncontrolled total annual mass emissions, as determined in accordance with Section 219.502(a) of this Subpart, of less than 30,000 lb/yr of VOM for all products manufactured in such batch process train.

d) The applicability equations in subsection (e) of this Section, which require the calculation of uncontrolled total annual mass emissions and flow rate value, shall be used to determine whether a single unit operation or a batch process train is subject to the control requirements set forth in Section 219.501 of this Subpart. The applicability equation shall be applied to the following:

1) Any single unit operation with uncontrolled total annual mass emissions that exceed 500 lb/yr and with a VOM concentration greater than 500 ppmv. In this individual determination, no applicability analysis shall be performed for any single unit operation with a VOM concentration of less than or equal to 500 ppmv; and

2) Any batch process train containing process vents which, in the aggregate, have uncontrolled total annual mass emissions of 30,000 lb/yr or more of VOM from all products manufactured in the batch process train. Any single unit operation with uncontrolled total annual mass emissions exceeding 500 lb/yr, regardless of VOM concentration, shall be included in the aggregate applicability analysis.

e) Applicability equations

1) The applicability equations in this subsection are specific to volatility.

2) For purposes of this subsection, the following abbreviations apply:

A) FR = Vent stream flow rate, scfm;

B) UTAME = Uncontrolled total annual mass emissions of VOM, expressed as lb/yr;

C) WAV = Weighted average volatility;

D) $MVOM_i$ = Mass of VOM component i;

E) $MWVOM_i$= Molecular weight of VOM component i; and

F) VP_i = Vapor pressure of VOM component i.

3) Weighted average volatility shall be calculated as follows:

$$WAV = \frac{\sum_{i=1}^{n} \frac{[(VP_i) \text{ x } (MVOM_i)]}{[(MWVOM_i)]}}{\sum_{i=1}^{n} \frac{[(MVOM_i)]}{[(MWVOM_i)]}}$$

4) For purposes of determining applicability, flow rate values shall be calculated as follows:

A) Low WAV has a vapor pressure less than or equal to 75 mmHg at 20°C (68°F), and shall use the following equation:

FR = [0.07 (UTAME)] - 1,821

B) Moderate WAV has a vapor pressure greater than 75 mmHg but less than or equal to 150 mmHg at 20°C (68°F), and shall use the following equation:

FR = [0.031 (UTAME)] - 494

C) High WAV has a vapor pressure greater than 150 mmHg at 20°C (68°F), and shall use the following equation:

FR = [0.013 (UTAME)] - 301

5) To determine the vapor pressure of VOM, the applicable methods and procedures in Section 219.111 of this Part shall apply.

(Source: Added at 19 Ill. Reg. 7385, effective May 22, 1995)

Section 219.501 Control Requirements for Batch Operations

a) Every owner or operator of a single unit operation with an average flow rate, as determined in accordance with Section 219.502(b) of this Subpart, below the flow rate value calculated by the applicability equations contained in Section 219.500(e) of this Subpart, shall reduce uncontrolled VOM emissions from such single unit operation by an overall efficiency, on average, of at least 90 percent, or 20 ppmv, per batch cycle.

b) Every owner or operator of a batch process train with an average flow rate, as determined in accordance with Section 219.502(b)(2) of this Subpart, below the flow rate value calculated by the applicability equations contained in Section 219.500(e) of this Subpart, shall reduce uncontrolled VOM emissions from such batch process train by an overall efficiency, on average, of at least 90 percent, or 20 ppmv, per batch cycle. For purposes of demonstrating compliance with the emission limitations set forth in this Section, any control device meeting the criteria in subsection (c) of this Section shall be deemed to achieve a control efficiency of 90 percent, or 20 ppmv, per batch cycle, as applicable.

c) Notwithstanding subsection (a) or (b) of this Section, any source that has installed on or before March 15, 1995, any control device which is demonstrated to the Agency's satisfaction to be unable to meet the applicable control requirements of this Section, scrubber, or shell and tube condenser using a non-refrigerated cooling media, and such device achieves at least 81 percent control efficiency of VOM emissions, is required to meet the 90 percent emission limitation or 20 ppmv VOM concentration set forth in subsection (a) or (b) of this Section, as applicable, upon the earlier to occur of the date the device is replaced for any reason, including, but not limited to, normal maintenance, malfunction, accident, and obsolescence, or December 31, 1999. A scrubber, shell and tube condenser using a non-refrigerated cooling media, or other control device meeting the criteria of this subsection, is considered replaced when:

 1) All of the device is replaced; or

 2) When either the cost to repair the device or the cost to replace part of the device exceeds 50 percent of the cost of replacing the entire device with a control device that complies with the 90 percent emission limitation or 20 ppmv VOM concentration level in subsection (a) of this Section, as applicable.

d) If a boiler or process heater is used to comply with this Section, the vent stream shall be introduced into the flame zone of the boiler or process heater.

e) If a flare is used to comply with this Section, it shall comply with the requirements of 40 CFR 60.18, incorporated by reference at Section 219.112 of this Part. The flare operation requirements of 40 CFR 60.18 do not apply if a process, not subject to this Subpart, vents an emergency relief discharge into a common flare header and causes the flare servicing the process subject to this Subpart to not comply with one or more of the provisions of 40 CFR 60.18.

(Source: Added at 19 Ill Reg. 7385, effective May 22, 1995)

Section 219.502 Determination of Uncontrolled Total Annual Mass Emissions and Actual Weighted Average Flow Rate Values for Batch Operations

a) Uncontrolled total annual mass emissions shall be determined by the following methods:

1) Direct process vent emissions measurements taken prior to any release to the atmosphere, following any recovery device and prior to any control device, provided such measurements conform with the requirements of measuring the mass flow rate of VOM incoming to the control device as set forth in Section 219.503(f)(2), (f)(3)(A) and (f)(3)(B) of this Subpart; or

2) Engineering estimates of the uncontrolled VOM emissions from a process vent or process vents, in the aggregate, within a batch process train, using either the potential or permitted number of batch cycles per year or total production as represented in the source's operating permit as follows:

A) Engineering estimates of the uncontrolled VOM emissions shall be based upon accepted chemical engineering principles, measurable process parameters, or physical or chemical laws and their properties. Examples of methods include, but are not limited to, the following:

i) Use of material balances based on process stoichiometry to estimate maximum VOM concentrations;

ii) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities; and

iii) Estimation of VOM concentrations based on saturation conditions.

B) All data, assumptions and procedures used in any engineering estimate shall be documented.

b) Average flow rate shall be determined by any of the following methods:

1) Direct process vent flow rate measurements taken prior to any release to the atmosphere, following any recovery device and prior to any control device, provided such measurements conform with the requirements of measuring incoming volumetric flow rate set forth in Section 219.503(e)(2) of this Subpart;

2) Average flow rate for a single unit operation having multiple emission events or batch process trains shall be the weighted average flow rate, calculated as follows:

$$WAF = \frac{\sum_{i=1}^{n} [AFR_i \times ADE_i]}{\sum_{i=1}^{n} (ADE_i)}$$

where:

WAF = Actual weighted average flow rate for a single unit operation or batch process train;

AFR_i = Average flow rate per emission event;

ADE_i = Annual duration of emission event; and

n = Number of emission events.

For purposes of this formula, the term "emission event" shall be defined as a discrete period of venting that is associated with a single unit operation. For example, a displacement of vapor resulting from the charging of a single unit operation with VOM will result in a discrete emission event that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. The expulsion of expanded vapor space when the single unit operation is heated is also an emission event. Both of these examples of emission events and others may occur in the same single unit operation during the course of the batch cycle. If the flow rate measurement for any emission event is zero, according to Section 218.503(f)(2) of this Subpart, then such event is not an emission event for purposes of this Section.

3) Engineering estimates calculated in accordance with the requirements in subsection (a)(2) of this Section.

c) For purposes of determining the average flow rate for steam vacuuming systems, the steam flow shall be included in the average flow rate calculation.

(Source: Added at 19 Ill. Reg. 7385, effective May 22, 1995)

Section 219.503 Performance and Testing Requirements for Batch Operations

a) Upon the Agency's request, the owner or operator of a batch operation shall conduct testing to demonstrate compliance with Section 219.501 of this Subpart.

The owner or operator shall, at its own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 219.503(d), (e), and (f) of this Subpart.

b) Notwithstanding subsection (a) of this Section, flares and process boilers used to comply with control requirements of Section 219.501 of this Subpart shall be exempt from performance testing requirements.

c) When a flare is used to comply with the control requirements of Section 219.501 of this Subpart, the flare shall comply with the requirements of 40 CFR 60.18, incorporated by reference at Section 219.112 of this Part.

d) The owner or operator of a batch operation that is exempt from the control requirements of Section 219.501 of this Subpart shall demonstrate, upon the Agency's request, the absence of oversized gas moving equipment in any manifold. Gas moving equipment shall be considered oversized if it exceeds the maximum requirements of the exhaust flow rate by more than 30 percent.

e) For the purpose of demonstrating compliance with the control requirements in Section 219.501 of this Subpart, the batch operation shall be run at representative operating conditions and flow rates during any performance test.

f) The following methods in 40 CFR 60, Appendix A, incorporated by reference at Section 219.112 of this Part, shall be used to demonstrate compliance with the reduction efficiency requirement set forth in Section 219.501 of this Subpart:

1) Method 1 or 1A, as appropriate, for selection of the sampling sites if the flow measuring device is not a rotameter. The control device inlet sampling site for determination of vent stream VOM composition reduction efficiency shall be prior to the control device and after the control device;

2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of gas stream volumetric flow rate flow measurements, which shall be taken continuously. No traverse is necessary when the flow measuring device is an ultrasonic probe;

3) Method 25A or Method 18, if applicable, to determine the concentration of VOM in the control device inlet and outlet;

A) The sampling time for each run shall be as follows:

i) For batch cycles less than eight hours in length, readings shall be taken continuously over the entire length of the batch cycle with a maximum of 15-minute intervals between measurements if using Method 25A. If using Method 18, readings shall be taken continuously with a maximum of 15-minute intervals between measurements throughout the batch cycle unless it becomes necessary to change the impinger train, in which case a 30-minute interval shall not be exceeded.

ii) For batch cycles of eight hours and greater in length, the owner or operator may either test in accordence with the test procedures defined in subsection (f)(3)(A)(i) of this Section or the owner or operator may elect to perform tests, pursuant to either Method 25A or Method 18, only during those portions of each emission event which define the emission profile of each emission event occurring within the batch cycle. For each emission event of less than four hours in duration, the owner or operator shall test continuously over the entire emission event as set forth in subsection (f)(3)(A)(i) of this Section. For each emission event of greater than four hours in duration, the owner or operator shall elect either to perform a minimum of three one hour test runs during the emission event or shall test continuously over the entire emission event within each single unit operation in the batch process train. To demonstrate that the portion of the emission event to be tested define the emission profile for the emission event, the owner or operator electing to rely on this option shall develop an emission profile for the entire emission event. Such emission profile shall be based upon either process knowledge or test data collected. Examples of information that could constitute process knowledge include, but are not limited to, calculations based on material balances and process stoichiometry. Previous test results may be used provided such results are still relevant to the current process vent stream conditions.

iii) For purposes of subsection (f)(3) of this Section, the term "emission event" shall be defined as a discrete period of venting that is associated with a single unit operation. For example, a displacement of vapor resulting from the charging of a single unit operation with VOM will result in a discrete emission event that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. The expulsion of expanded single unit operation vapor space when the vessel is heated is also an emission event. Both of these examples of emission events and others may occur in the same single unit operation during the course of the batch cycle. If the flow rate measurement for any emission event is zero, in accordance with subsection (f)(2) of this Section, then such event is not an emission event for purposes of this Section.

B) The mass emission rate from the process vent or inlet to the control device shall be determined by combining concentration and flow rate measurements taken simultaneously at sampling sites selected in accordance with subsection (f)(1) of this Section throughout the batch cycle;

C) The mass emission rate from the control device outlet shall be obtained by combining concentration and flow rate measurements taken simultaneously at sampling sites selected in accordance with subsection (f)(1) of this Section throughout the batch cycle; and

D) The efficiency of the control device shall be determined by integrating the mass emission rates obtained in subsections (f)(3)(B) and (f)(3)(C) of this Section, over the time of the batch cycle and dividing the difference in inlet and outlet mass flow totals by the inlet mass flow total.

g) Upon request by the Agency to conduct testing, an owner or operator of a batch operation which has installed a scrubber, a shell and tube condenser using a non-refrigerated cooling media, or any other control device which meets the criteria of Section 219.501(c) of this Subpart, shall demonstrate that such device achieves the control efficiency applicable within Section 219.501 of this Subpart upon the earlier to occur of the date the device is replaced or December 31, 1999.

h) The owner or operator of a batch operation may propose an alternative test method or procedures to demonstrate compliance with the control requirements set forth in Section 219.501 of this Subpart. Such method or procedures shall be approved by the Agency and USEPA as evidenced by federally enforceable permit conditions.

i) In the absence of a request by the Agency to conduct performance testing in accordance with the provisions of this Section, a source may demonstrate compliance by the use of engineering estimates or process stoichiometry.

(Source: Added at 19 Ill. Reg. 7385, effective May 22, 1995)

Section 219.504 Monitoring Requirements for Batch Operations

a) Every owner or operator using an afterburner to comply with Section 219.501 of this Subpart shall install, calibrate, maintain and operate, according to manufacturer's specifications, temperature monitoring devices with an accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius, equipped with continuous recorders.

1) Where a catalytic afterburner is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

2) Where an afterburner other than a catalytic afterburner is used, a temperature monitoring device shall be installed in the combustion chamber.

b) Every owner or operator using a flare to comply with Section 219.501 of this Subpart, shall install, calibrate, maintain and operate, according to manufacturer's specifications, a heat sensing device, such as an ultra-violet beam sensor or thermocouple, at the pilot light to indicate continuous presence of a flame.

c) Every owner or operator using a scrubber to comply with this Section 219.501 of this Subpart shall install, calibrate, maintain, and operate, according to manufacturer's specifications, the following:

1) A temperature monitoring device for scrubbant liquid having an accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius and a specific gravity device for scrubbant liquid, each equipped with a continuous recorder; or

2) A VOM monitoring device used to indicate the concentration of VOM exiting the control device based on a detection principle such as infra-red photoionization, or thermal conductivity, each equipped with a continuous recorder.

d) Every owner or operator using a condenser to comply with Section 219.501 of this Subpart shall install, calibrate, maintain, and operate, according to manufacturer's specifications, the following:

1) A condenser exit temperature monitoring device equipped with a continuous recorder and having an accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius; or

2) A VOM monitoring device used to indicate the concentration of VOM such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

e) Every owner or operator using a carbon adsorber to comply with this Subpart shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, the following equipment:

1) An integrating regeneration steam flow monitoring device having an accuracy of ± 10 percent, and a carbon bed temperature monitoring device having an accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius, both equipped with a continuous recorder; or

2) A VOM monitoring device used to indicate the concentration level of VOM exiting such device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

f) Every owner or operator using a boiler or process heater with a design heat input capacity less than 44 Mw to comply with Section 219.501 of this Subpart shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a temperature monitoring device in the firebox with an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius, equipped with a continuous recorder. Any boiler or process heater in which all process vent streams are introduced with primary fuel is exempt from this requirement.

g) The owner or operator of a process vent shall be permitted to monitor by an alternative method or may monitor parameters other that those listed in subsections (a) through (f) of this Section, if approved by the Agency and USEPA. Such alternative method or parameters shall be contained in the source's operating permit as federally enforceable permit conditions.

h) Notwithstanding subsections (a) through (g) of this Section, sources using a scrubber, shell and tube condenser using a non-refrigerated cooling media, or other control device meeting the criteria of Section 219.501(c) of this Subpart, are required to monitor compliance with the requirements of this Subpart on and after the earlier to occur of the date such device is replaced for any reason or December 31, 1999.

(Source: Added at 19 Ill. Reg. 7385, effective May 22, 1995)

Section 219.505 Reporting and Recordkeeping for Batch Operations

a) Every owner or operator of a de minimis single unit operation or batch process train exempt under Section 219.500(c)(1) or (c)(2) of this Subpart shall keep records of the uncontrolled total annual mass emissions for any de minimis single unit operation or batch process train, as applicable, and documentation verifying these values or measurements. The documentation shall include the engineering calculations, any measurements made in accordance with Section 219.503 of this Subpart, and the potential or permitted number of batch cycles per year, or, in the alternative, total production as represented in the source's operating permit.

b) Every owner or operator of a single unit operation exempt under Section 219.500(b)(3) or (d) of this Subpart shall keep the following records:

1) The uncontrolled total annual mass emissions and documentation verifying these values or measurements. The documentation shall include any engineering calculations, any measurements made in accordance with Section 219.503 of this Subpart, and the potential or permitted number of batch cycles per year or, in the alternative, total production as represented in the source's operating permit.

2) The average flow rate in scfm and documentation verifying this value.

c) Every owner or operator of a batch operation subject to the control requirements of Section 219.501 of this Subpart shall keep records of the following parameters required to be monitored under Section 219.504 of this Subpart:

1) If using a thermal or catalytic afterburner to comply with Section 219.501 of this Subpart, records indicating the average combustion chamber temperature of the afterburner (or the average temperature upstream and downstream of the catalyst bed for a catalytic afterburner), measured continuously and averaged over the same time period as the performance test;

2) If using a flare (i.e., steam-assisted, air-assisted or nonassisted) to comply with Section 219.501 of this Subpart, continuous records of the flare pilot flame monitoring and records of all periods of operations during which the pilot flame is absent.

3) If using any of the following as a control device, the following records:

   A) Where a scrubber is used, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Agency) and the average exit temperature of the absorbing liquid, measured continuously and averaged over the same time period as the performance test (both measured while the vent stream is routed normally);

   B) Where a condenser is used, the average exit (product side) temperature measured continuously and averaged over the same time period as the performance test while the vent stream is routed normally;

   C) Where a carbon adsorber is used, the total steam mass flow measured continuously and averaged over the same time period as the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes after completion of any cooling cycle(s)), and duration of the carbon bed steaming cycle (all measured while the vent stream is routed normally); or

   D) As an alternative to subsections (c)(3)(A), (c)(3)(B), or (c)(3)(C) of this Section, at a minimum, records indicating the concentration level or reading indicated by the VOM monitoring device at the outlet of the scrubber, condenser, or carbon adsorber, measured continuously and averaged over the same time period as the performance test (while the vent stream is routed normally).

d) Every owner or operator of a single unit operation claiming a vent stream concentration exemption level, as set forth in Section 218.500(d)(1) of this Subpart, shall maintain records to indicate the vent stream concentration is less than or equal to 500 ppmv, and shall notify the Agency in writing if the vent stream concentration at any time equals or exceeds 500 ppmv, within 60 days after such event. Such notification shall include a copy of all records of such event.

e) An owner or operator of a batch operation subject to the control requirements of Section 219.501 of this Subpart may maintain alternative records other than those listed in subsection (c) of this Section. Any alternative recordkeeping shall be approved by the Agency and USEPA and shall be contained in the source's operating permit as federally enforceable permit conditions.

f) Notwithstanding subsections (a) through (e) of this Section, any owner or operator of a batch operation which uses either a scrubber, shell and tube condenser using non-refrigerated cooling media, or other control device meeting the criteria of Section 219.501(c) of this Subpart, is required to monitor compliance with the requirements of this Subpart on and after the earlier to occur of the date such device is replaced for any reason or December 31, 1999.

g) The owner or operator of a de minimis single unit operation or batch process train exempt from the control requirements of Section 219.500(c) of this Subpart shall notify the Agency in writing if the uncontrolled total annual mass emissions from such de minimis single unit operation or batch process train exceed the threshold in Section 219.500(c)(1) or (c)(2) of this Subpart, respectively, within 60 days after the event occurs. Such notification shall include a copy of all records of such event.

h) Every owner or operator of a batch operation required to keep records under this Section shall maintain such records at the source for a minimum period of three years and shall make all such records available to the Agency upon request.

(Source: Added at 19 Ill.Reg. 7385, effective May 22, 1995)

Section 219.506 Compliance Date

Every owner or operator of a batch operation subject to Sections 219.500 through 219.506 of this Subpart shall comply with its standards, limitations and mandates by March 15, 1996, or upon initial start up, whichever is later.

(Source: Added at 19 Ill. Reg. 7385, effective May 22, 1995)

Section 219.520 Emission Limitations for Air Oxidation Processes

a) No person shall cause or allow the emission of volatile organic material (VOM) from any process vent stream unless the process vent stream is vented to a combustion device which is designed and operated either:

1) To reduce the volatile organic emissions vented to it with an efficiency of at least ninety eight percent (98%) by weight; or

2) To emit VOM at a concentration less than twenty parts per million by volume, dry basis.

b) Combustion Device at a Phthalic Anhydride Air Oxidation Process

1) Notwithstanding subsection (a) above, and subject to subsection (b)(2) below, no person shall cause or allow the emissions of VOM through an existing combustion device at a phthalic anhydride air oxidation process, unless the combustion device is operated to achieve:

A) 90% control of the volatile organic emissions vented to it; or

B) VOM emissions concentration of less than 50 parts per million by volume, dry basis.

2) Any existing combustion device subject to subsection (b)(1) above is required to meet the 98 percent emissions limit set forth in subsection (a) above either upon replacing the combustion device for any reasons, including, but not be limited to, normal maintenance, malfunction, accident, and obsolesence, or the date of December 31, 1999, whichever comes first. A combustion device is considered to be replaced when:

A) All of the device is replaced; or

B) When the cost of the repair of the device or the cost of replacement of part of the device exceeds 50% of the cost of replacing the entire device with a device which complies.

c) The limitations of subsection (a) above shall apply to any process vent stream or combination of process vent streams with a Total Resource Effectiveness Index (TRE) less than or equal to 6.0. TRE shall be determined by the following methods:

1) If an air oxidation process has more than one process vent stream, the TRE shall be the more stringent of either the TRE based upon a combination of the process vent streams or the TRE based upon each individual process vent stream.

2) The TRE of a process vent stream and the TRE of a combination of process vent streams, whichever is applicable, shall be determined according to the following equation:

TRE = E(-1) [a + bF(n) + cF + dFH + e(FH)(n) + fF(0.5)]

where:

n = 0.88;

TRE = Total resource effectiveness index;

F = Vent stream flowrate (scm/min), at a standard temperature of 20°C;

E = Hourly measured emissions in kg/hr;

H = Net heating value of vent stream (MJ/scm), where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C, as in the definition of "Flow";

a,b,c,d,
e and f = Coefficients obtained by use of Appendix D.

3) For nonchlorinated process vent streams, if the net heating value, H, is greater than 3.6 MJ/scm, F shall be replaced by F' for purposes of calculating TRE. F' is computed as follows:

$$F' = FH / 3.6$$

where F and H are as defined in subsection (c)(2).

4) The actual numerical values used in the equation described in subsection (c)(2) shall be determined as follows:

A) All reference methods and procedures for determining the flow (F), hourly emissions (E), and net heating (H), value shall be in accordance with Appendix C.

B) All coefficients described in subsection (c)(2) of this Section shall be in accordance with Appendix D.

(Source: Section 219.520 renumbered from Section 218.525 and amended at 18 Ill Reg. 16980, effective November 15, 1994)

Section 219.522 Savings Clause

The owner or operator of an air oxidation process with a TRE of 1.0 or less shall have complied with the requirements of Section 219.520(a) of this Subpart by the dates set forth in Section 219.106(a) and (b) of this Part. Sources that are subject to 219.520(b) of this Subpart that become subject to the control requirements of 219.520(a) of this Subpart after the compliance dates set out in 219.106(a) and (b) of this Part shall comply with the timetable set forth within Section 219.520(b).

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

Section 219.523 Compliance

The emissions limitations for air oxidation processes located in Section 219.520 (a) of this Subpart are applicable to air oxidation processes on October 25, 1994.

a) An owner or operator of an air oxidation process with a TRE of 6.0 or less that is subject to the requirements of Section 219.520(a) of this Subpart on October 25, 1994 shall comply with the provisions of Section 219.520(a) by December 31, 1999, or upon startup of the emission unit, whichever comes first. This subsection does not supersede the Savings Clause in Section 219.522 of this Part.

b) An owner or operator of an air oxidation process that becomes subject to the requirements of Section 219.520(a) of this Subpart after October 25, 1994 shall comply with the requirements of Section 219.520(a) upon startup of the emission unit.

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

Section 219.524 Determination of Applicability

a) Sources subject to the requirements of Section 219.520(a) of this Subpart either through application of 219.520(c) of this Subpart or through continued application under 219.522 of this Subpart shall continue to be subject to the applicable limitations even if operations change so as to result in a TRE that is above that which initially made the regulation applicable to the source's operations.

b) Notwithstanding Section 219.520(c) of this Subpart, any air oxidation process that utilizes a combustion device to control process vent streams at any time shall maintain the process in compliance with the provisions of Section 219.520(a) of this Subpart at all times thereafter.

(Source: Added at 18 Ill. Reg. 16980, effective November 15, 1994)

Section 219.526 Testing and Monitoring

a) Upon reasonable request by the Agency, the owner or operator of an air oxidation process shall demonstrate compliance with this Subpart by use of the methods specified in Appendix C. This Section does not limit the USEPA's authority, under the Clean Air Act, to require demonstrations of compliance.

b) A person planning to conduct a VOM emissions test to demonstrate compliance with this Subpart shall notify the Agency of that intent not less than 30 days before the planned initiation of the tests so that the Agency may observe the test.

SUBPART W: AGRICULTURE

Section 219.541 Pesticide Exception

The provisions of Sections 219.301 and 219.302 of this Part shall not apply to the spraying or use of insecticides, herbicides or other pesticides.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART X: CONSTRUCTION

Section 219.561 Architectural Coatings

No person shall cause or allow the sale or use of any architectural coating containing more than 20 percent by volume of photo-chemically reactive material in containers having a capacity of more than one gallon.

Section 219.562 Paving Operations

The provisions of Sections 219.301 and 219.302 of this Part shall not apply to the application of paving asphalt and pavement marking paint from sunrise to sunset.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.563 Cutback Asphalt

a) No person shall cause or allow the use or application of cutback asphalt for paving, resurfacing, reconditioning, repairing or otherwise maintaining a roadway unless:

1) The use or application of the cutback asphalt commences on or after October 1 of any year and such use or application is completed by April 30 of the following year; or

2) The cutback asphalt is a long-life stockpile material which remains in stock after April 30 of each year and as such it may be used until depleted for patching potholes and for other similar repair work; or

3) The cutback asphalt is to be used solely as an asphalt prime coat.

b) Sources subject to this Section are not required to submit or obtain an Agency approved compliance plan or project completion schedule under 35 Ill. Adm. Code 201, Subpart H.

SUBPART Y: GASOLINE DISTRIBUTION

Section 219.581 Bulk Gasoline Plants

a) Subject to subsection (e) of this Section, no person may cause or allow the transfer of gasoline from a delivery vessel into a stationary storage tank located at a bulk gasoline plant unless;

1) The delivery vessel and the stationary storage tank are each equipped with a vapor collection system that meets the requirements of subsection (d)(4) of this Section;

2) Each vapor collection system is operating;

3) The delivery vessel displays the appropriate sticker pursuant to the requirements of Sections 219.584 (b) or (d) of this Part;

4) The pressure relief valve(s) on the stationary storage tank and the delivery vessel are set to release at no less than 0.7 psi or the highest pressure allowed by state or local fire codes or the guidelines of the National Fire Prevention Association; and

5) The stationary storage tank is equipped with a submerged loading pipe.

b) Subject to subsection (f) of this Section, no person may cause or allow the transfer of gasoline from a stationary storage tank located at a bulk gasoline plant into a delivery vessel unless:

1) The requirements set forth in subsections (a)(1) through (a)(4) of this Section are met; and

2) Equipment is available at the bulk gasoline plant to provide for the submerged filling of the delivery vessel or the delivery vessel is equipped for bottom loading.

c) Subject to subsection (e) of this Section, each owner of a stationary storage tank located at a bulk gasoline plant shall:

1) Equip each stationary storage tank with a vapor control system that meets the requirements of subsection (a) or (b) of this Section, whichever is applicable;

2) Provide instructions to the operator of the bulk gasoline plant describing necessary maintenance operations and procedures for prompt notification of the owner in case of any malfunction of a vapor control system; and

3) Repair, replace or modify any worn out or malfunctioning component or element of design.

d) Subject to subsection (e) of this Section, each operator of a bulk gasoline plant shall:

1) Maintain and operate each vapor control system in accordance with the owner's instructions;

2) Promptly notify the owner of any scheduled maintenance or malfunction requiring replacement or repair of a major component of a vapor control system; and

3) Maintain gauges, meters or other specified testing devices in proper working order;

4) Operate the bulk plant vapor collection system and gasoline loading equipment in a manner that prevents:

A) Gauge pressure from exceeding 45.7 cc (18 in.) of water and vacuum from exceeding 15.2 cm (6 in.) of water, as measured as close as possible to the vapor hose connection; and

B) A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", Appendix B, EPA 450/2-78-051, (incorporated by reference in Section 219.112 of this Part); and

C) Avoidable leaks of liquid during loading or unloading operations.

5) Provide a pressure tap or equivalent on the bulk plant vapor collection system in order to allow the determination of compliance with subsection (d)(4)(A) of this Section; and

6) Within 15 business days after discovery of any leak by the owner, the operator, the Agency or the USEPA, repair and retest a vapor collection system which exceeds the limits of subsection (d)(4)(A) or (B) of this Section.

e) The requirements of subsections (a), (c) and (d) of this Section shall not apply to:

1) Any stationary storage tank with a capacity of less than 2,177 1 (575 gal); or

2) Any bulk gasoline plant whose daily gasoline throughput is less than 15,140 1 (4,000 gal/day) on a thirty-day rolling average.

f) The requirements of subsection (b) shall apply only to bulk gasoline plants whose daily gasoline throughput is greater than or equal to 15,140 1 (4,000 gal/day) on a thirty-day rolling average.

g) Any bulk gasoline plant which is ever subject to subsections (a), (b), (c), or (d) of this Section shall always be subject to these paragraphs.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.582 Bulk Gasoline Terminals

a) No person shall cause or allow the transfer of gasoline into any delivery vessel from any bulk gasoline terminal unless:

1) The bulk gasoline terminal is equipped with a vapor control system that limits emission of VOM to 80 mg/1 (0.00067 lbs/gal) of gasoline loaded;

2) The vapor control system is operating and all vapors displaced in the loading of gasoline to the delivery vessel are vented only to the vapor control system;

3) There is no liquid drainage from the loading device when it is not in use;

4) All loading and vapor return lines are equipped with fittings which are vapor tight; and

5) The delivery vessel displays the appropriate sticker pursuant to the requirements of Section 219.584(b) or (d) of this Part; or, if the terminal is driver-loaded, the terminal owner or operator shall be deemed to be in compliance with this Section when terminal access authorization is limited to those owners and/or operators of delivery vessels who have provided a current certification as required by Section 219.584(c)(3) of this Part.

b) The operator of a bulk gasoline terminal shall:

1) Operate the terminal vapor collection system and gasoline loading equipment in a manner that prevents:

A) Gauge pressure from exceeding 18 inches of water and vacuum from exceeding 6 inches of water as measured as close as possible to the vapor hose connection; and

B) A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B, incorporated by reference in Section 219.112 of this Part; and

C) Avoidable leaks of liquid during loading or unloading operations.

2) Provide a pressure tap or equivalent on the terminal vapor collection system in order to allow the determination of compliance with Section 219.582(d)(1)(A) of this Part; and

3) Within 15 business days after discovery of the leak by the owner, operator, or the Agency repair and retest a vapor collection system which exceeds the limits of subsection (c)(1)(A) or (B) of this Section.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.583 Gasoline Dispensing Operations - Storage Tank Filling Operations

a) Subject to subsection (b) below, no person shall cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank at a gasoline dispensing operation unless:

1) The tank is equipped with a submerged loading pipe; and

2) The vapors displaced from the storage tank during filling are processed by a vapor control system that includes one or more of the following:

A) A vapor collection system that meets the requirements of subsection (d)(4) below; or

B) A refrigeration-condensation system or any other system approved by the Agency and approved by the USEPA as a SIP revision, that recovers at least 90 percent by weight of all vaporized organic material from the equipment being controlled; and

C) The delivery vessel displays the appropriate sticker pursuant to the requirements of Section 219.584(b) or (d) of this Part; and

3) By March 15, 1995, all tank vent pipes are equipped with pressure/vacuum relief valves with the following design specifications:

A) The pressure/vacuum relief valve shall be set to resist a pressure of at least 3.5 inches water column and to resist a vacuum of no less than 6.0 inches water column; or

B) The pressure/vacuum relief valve shall meet the requirements of 35 Ill. Adm. Code 218.586(c); and

4) The owner or operator of a gasoline dispensing operation demonstrates compliance with subsection (a)(3) of this Section, by March 15, 1995 or 30 days after installation of each pressure/vacuum relief valve, whichever is later, and at least annually thereafter, by measuring and recording the pressure indicated by a pressure/vacuum gauge at each tank vent pipe. The test shall be performed on each tank vent pipe within two hours after product delivery into the respective storage tank. For manifolded tank vent systems, observations at any point within the system shall be adequate. The owner or operator shall maintain any records required by this subsection for a period of three years.

b) The requirements of subsections (a)(2) and (a)(3) above shall not apply to transfers of gasoline to a stationary storage tank at a gasoline dispensing operation if:

1) The tank is equipped with a floating roof, or other system of equal or better emission control as approved by the Agency and approved by the USEPA as a SIP revision;

2) The tank has a capacity of less than 2000 gallons and was in place and operating before January 1, 1979; or

3) The tank has a capacity of less than 575 gallons.

c) Subject to subsection (b) above, each owner of a gasoline dispensing operation shall:

1) Install all control systems and make all process modifications required by subsection (a) above;

2) Provide instructions to the operator of the gasoline dispensing operation describing necessary maintenance operations and procedures for prompt notification of the owner in case of any malfunction of a vapor control system; and

3) Repair, replace or modify any worn out or malfunctioning component or element of design.

d) Subject to subsection (b) above, each operator of a gasoline dispensing operation shall:

1) Maintain and operate each vapor control system in accordance with the owner's instructions;

2) Promptly notify the owner of any scheduled maintenance or malfunction requiring replacement or repair of a major component of a vapor control system;

3) Maintain gauges, meters or other specified testing devices in proper working order;

4) Operate the vapor collection system and delivery vessel unloading points in a manner that prevents:

A) A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B incorporated by reference at Section 219.112 of this Part, and

B) Avoidable leaks of liquid during the filling of storage tanks; and

5) Within 15 business days after discovery of the leak by the owner, operator, or the Agency, repair and retest a vapor collection system which exceeds the limits of subsection (d)(4)(A).

(Source: Amended at 38 Ill. Reg. 1061, effective December 23, 2013)

Section 219.584 Gasoline Delivery Vessels

a) Any delivery vessel equipped for vapor control by use of vapor collection equipment:

1) Shall have a vapor space connection that is equipped with fittings which are vapor tight;

2) Shall have its hatches closed at all times during loading or unloading operations, unless a top loading vapor recovery system is used;

3) Shall not internally exceed a gauge pressure of 18 inches of water or a vacuum of 6 inches of water;

4) Shall be designed and maintained to be vapor tight at all times during normal operations;

5) Shall not be refilled in Illinois at other than:

A) A bulk gasoline terminal that complies with the requirements of Section 219.582 of this Part or

B) A bulk gasoline plant that complies with the requirements of Section 219.581(b) of this Part.

6) Shall be tested annually in accordance with Method 27, 40 CFR 60, Appendix A, incorporated by reference in Section 219.105 of this Part. Each vessel must be repaired and retested within 15 business days after discovery of the leak by the owner, operator, or the Agency, when it fails to sustain:

A) A pressure drop of no more than three inches of water in five minutes; and

B) A vacuum drop of no more than three inches of water in five minutes.

b) Any delivery vessel meeting the requirements of subsection (a) of this Section shall have a sticker affixed to the tank adjacent to the tank manufacturer's data plate which contains the tester's name, the tank identification number and the date of the test. The sticker shall be in a form prescribed by the Agency, and, for those delivery vessels subject to 35 Ill. Adm. Code 215 as of December 31, 1987 shall have been displayed no later than December 31, 1987.

c) The owner or operator of a delivery vessel shall:

1) Maintain copies of any test required under subsection (a)(6) of this Section

for a period of 3 years;

2) Provide copies of these tests to the Agency upon request; and

3) Provide annual test result certification to bulk gasoline plants and terminals where the delivery vessel is loaded.

d) Any delivery vessel which has undergone and passed a test in another state which has a USEPA-approved leak testing and certification program will satisfy the requirements of subsection (a) of this Section. Delivery vessels must display a sticker, decal or stencil approved by the state where tested or comply with the requirements of subsection (b) of this Section. All such stickers, decals or stencils shall have been displayed no later than December 31, 1987, for delivery vessels subject to 35 Ill. Adm. Code 215 as of December 31, 1987.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART Z: DRY CLEANERS

Section 219.607 Standards for Petroleum Solvent Dry Cleaners

a) The owner or operator of a petroleum solvent dry cleaning dryer shall either:

1) Limit emissions of volatile organic material to the atmosphere to an average of 3.5 kilograms of VOM per 100 kilograms dry weight of articles dry cleaned, or

2) Install and operate a solvent recovery dryer in a manner such that the dryer remains closed and the recovery phase continues until a final solvent flow rate of 50 ml per minute is attained.

b) The owner or operator of a petroleum solvent filtration system shall either:

1) Reduce the VOM content in all filtration wastes to 1.0 kilogram or less per 100 kg dry weight of articles dry cleaned, before disposal, and exposure to the atmosphere, or

2) Install and operate a cartridge filtration system, and drain the filter cartridges in their sealed housings for 8 hours or more before their removal.

Section 219.608 Operating Practices for Petroleum Solvent Dry Cleaners

In order to minimize fugitive solvent emissions, the owner or operator of a petroleum solvent dry cleaning source shall employ good housekeeping practices including the following:

a) General Housekeeping Requirements

1) Equipment containing solvent (washers, dryers, extractors and filters) shall remain closed at all times except during load transfer and maintenance. Lint filter and button trap covers shall remain closed except when solvent-laden material is being removed.

2) Cans, buckets, barrels and other containers of solvent or of solvent-laden material shall be covered except when in use.

3) Solvent-laden material shall be exposed to the atmosphere only for the minimum time necessary for load transfer.

b) Installation and operation of equipment:

1) All cartridge filters shall be enclosed and operated in accordance with the procedures and specifications recommended by the manufacturer for the cartridge filter. After installation, the cartridges shall be inspected, monitored and maintained in accordance with the manufacturer's recommendations; and

2) Vents on containers for new solvent and for solvent-containing waste shall be constructed and maintained so as to minimize solvent vapor emissions. Criteria for the minimization of solvent vapor emissions include the elimination of solvent buckets and barrels standing open to the atmosphere, and the repair of gaskets and seals that expose solvent-rich environments to the atmosphere, to be determined through visual inspection.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.609 Program for Inspection and Repair of Leaks

a) The owner or operator of a petroleum solvent dry cleaning source shall conduct the following visual inspections on a weekly basis:

1) Washers, dryers, solvent filters, settling tanks, vacuum stills and containers and conveyors of petroleum solvent shall be inspected for visible leaks of solvent liquid.

2) Pipes, hoses and fittings shall be inspected for active dripping or dampness.

3) Pumps and filters shall be inspected for leaks around seals and access covers.

4) Gaskets and seals shall be inspected for wear and defects.

b) Leaks of petroleum solvent liquid and vapors shall be repaired within three working days of detection, unless necessary replacement parts are not on site.

1) If necessary, repair parts shall be ordered within three working days of detection of the leak.

2) The leak shall be repaired within three days of delivery of necessary parts.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.610 Testing and Monitoring

a) Compliance with Sections 219.607(b)(2), 219.608 and 219.609 of this Part shall be determined by visual inspection; and

b) Compliance with Sections 219.607(a)(2) and (b)(1) of this Part shall be determined by methods described in EPA-450/3-82-009 (1982) incorporated by reference in Section 219.112 of this Part.

c) If a control device is used to comply with Section 219.607(a)(1) of this Part, then compliance shall be determined using 40 CFR 60 Appendix A, Method 25 (1984) incorporated by reference in Section 219.112 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.611 Exemption for Petroleum Solvent Dry Cleaners

The provisions of Sections 219.607 through 219.610 of this Part shall not apply to petroleum solvent dry cleaning sources whose emissions of volatile organic material do not exceed 91 Mg (100 tons) per year in the absence of pollution control equipment or whose emissions of VOM, as limited by the operating permit, will not exceed 91 Mg (100 tons) per year in the absence of pollution control equipment.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART AA: PAINT AND INK MANUFACTURING

Section 219.620 Applicability

a) This Subpart shall apply to all paint and ink manufacturing sources which:

1) Include process emission units not subject to Subparts B, E, F (excluding Section 219.204(l) of this Part), H (excluding Section 219.405 of this Part), Q, R, S, T (excluding Section 219.486 of this Part), V, X, Y, Z or BB of this Part; and which as a group both:

A) Have maximum theoretical emissions of 91 Mg (100 tons) or more per calendar year of VOM if no air pollution control equipment were used, and

B) Are not limited to less than 91 Mg (100 tons) of VOM emissions per calendar year in the absence of air pollution control equipment, through production or capacity limitations contained in a federally enforceable permit or a SIP revision, or

2) Produce more than 7,570,820 1 (2,000,000 gal) per calendar year of paint or ink formulations, which contain less than 10 percent (by weight) water, and ink formulations not containing as the primary solvents water, Magie oil or glycol.

b) For the purposes of this Subpart, uncontrolled VOM emissions are the emissions of VOM which would result if no air pollution control equipment were used.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.621 Exemption for Waterbase Material and Heatset-Offset Ink

The requirements of Sections 219.624 and 219.625 and Section 219.628(a) of this Part shall not apply to equipment while it is being used to produce either:

a) Paint or ink formulations which contain 10 percent or more (by weight) water, or

b) Inks containing Magie oil and glycol as the primary solvent.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.623 Permit Conditions

No person shall violate any condition in a permit when the condition results in exclusion of the source or an emission unit from this Subpart.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.624 Open-Top Mills, Tanks, Vats or Vessels

No person shall operate an open-top mill, tank, vat or vessel with a volume of more than 45 1 (12 gal) for the production of paint or ink unless:

a) The mill, tank, vat or vessel is equipped with a cover which completely covers the mill, tank, vat or vessel opening except for an opening no larger than necessary to allow for safe clearance for a mixer shaft. Such cover shall extend at least 1.27 cm (0.5 in.) beyond the outer rim of the opening or be attached to the rim.

b) The cover remains closed except when production, sampling, maintenance or inspection procedures require access.

c) The cover is maintained in good condition such that, when in place, it maintains contact with the rim of the opening for at least 90 percent of the circumference of the rim.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.625 Grinding Mills

a) No person shall operate a grinding mill for the production of paint or ink which is not maintained in accordance with the manufacturer's specifications.

b) No person shall operate a grinding mill fabricated or modified after the effective date of this Subpart which is not equipped with fully enclosed screens.

c) The manufacturer's specifications shall be kept on file at the plant by the owner or operator of the grinding mill and be made available to any person upon verbal or written request during business hours.

Section 219.626 Storage Tanks

a) The owner or operator shall equip tanks storing VOL with a vapor pressure greater than 10 kPa (1.5 psi) at 20°C (68°F) with pressure/vacuum conservation vents set as a minimum at +/$^{-}$0.2 kPa (0.029 psi). These controls shall be operated at all times. An alternative air pollution control system may be used if it results in a greater emission reduction than these controls. Any alternative control system can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision.

b) Stationary VOL storage containers with a capacity greater than 946 1 (250 gal) shall be equipped with a submerged-fill pipe or bottom fill. These controls shall be operated at all times. An alternative control system can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision.

Section 219.628 Leaks

The owner or operator of a paint or ink manufacturing source shall, for the purpose of detecting leaks, conduct an equipment monitoring program as set forth below:

a) Each pump shall be checked by visual inspection each calendar week for indications of leaks, that is, liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, the pump shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected.

b) Any pump, valve, pressure relief valve, sampling connection, open-ended valve and flange or connector containing a fluid which is at least 10 percent VOM by weight which appears to be leaking on the basis of sight, smell or sound shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected.

c) A weather proof, readily visible tag, in bright colors such as red or yellow, bearing an identification number and the date on which the leak was detected shall be attached to leaking equipment. The tag may be removed upon repair, that is, when the equipment is adjusted or otherwise altered to allow operation without leaking.

d) When a leak is detected, the owner or operator shall record the date of detection and repair and the record shall be retained at the source for at least two years from the date of each detection or each repair attempt. The record shall be made available to any person upon verbal or written request during business hours.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.630 Clean Up

a) No person shall clean paint or ink manufacturing equipment with organic solvent unless the equipment being cleaned is completely covered or enclosed except for an opening no larger than necessary to allow safe clearance for proper operation of the cleaning equipment, considering the method and materials being used.

b) No person shall store organic wash solvent in other than closed containers, unless closed containers are demonstrated to be a safety hazard, or dispose of organic wash solvent in a manner such that more than 20 percent by weight is allowed to evaporate into the atmosphere.

Section 219.636 Compliance Schedule

Every owner or operator of a source subject to the control requirements of this Subpart shall comply with the requirements thereof on and after a date consistent with Section 219.106 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.637 Recordkeeping and Reporting

a) Upon request by the Agency, the owner or operator of a source which claims to be exempt from the requirements of this Subpart shall submit records to the Agency within 30 calendar days from the date of the request which document that the source is in fact exempt from this Subpart. These records shall include (but are not limited to) the percent water (by weight) in the paint or ink being produced and the quantity of Magie oil, glycol and other solvents in the ink being produced.

b) Every owner or operator of a source which is subject to the requirements of this Subpart shall maintain all records necessary to demonstrate compliance with those requirements at the source for three years.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART BB: POLYSTYRENE PLANTS

Section 219.640 Applicability

The provisions of this Subpart shall apply to polystyrene plants:

a) Which use continuous processes to manufacture polystyrene - polybutadiene co-polymer; and

b) Which fall within Standard Industrial Classification Group No. 282, Industry No. 2821, except that the manufacture of polystyrene resins need not be the primary manufacturing process at the plant.

(Source: Renumbered from Section 219.875 and amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.642 Emissions Limitation at Polystyrene Plants

No person shall cause or allow the emissions of VOM from the material recovery section to exceed 0.12 kg of VOM per 1000 kg of polystyrene resin produced.

(Source: Renumbered from Section 219.877 at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.644 Emissions Testing

a) Upon a reasonable request by the Agency, the owner or operator of a polystyrene plant subject to this Subpart shall at his own expense demonstrate compliance by use of the following method: 40 CFR 60, Appendix A, Method 25 - Determination of Total Gaseous Non-Methane Organic Emissions as Carbon (1984), incorporated by reference in Section 219.112 of this Part.

b) A person planning to conduct a VOM emissions test to demonstrate compliance with this Subpart shall notify the Agency of that intent not less than 30 days before the planned initiation of the tests so the Agency may observe the test.

(Source: Renumbered from Section 219.886 and amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART GG: MARINE TERMINALS

Section 219.760 Applicability

a) The requirements of this Subpart shall apply to sources that load or who are permitted to load gasoline or crude oil.

b) The requirements of this Subpart shall not apply to the following activities:

  1) Loading of liquids associated with the fueling of marine vessels; or

  2) The transfer of liquids from one marine vessel to another marine vessel.

(Source: Added at 18 Ill. Reg. 16415, effective October 25, 1994)

Section 219.762 Control Requirements

a) Except as provided at subsection (c) of this Section, every owner or operator of a marine terminal subject to the requirements of this Subpart shall equip each terminal with a vapor collection and control system that:

1) Captures the vapors displaced during the loading event and reduces overall VOM emissions by at least 95% by weight through the use of either a vapor combustion system or a vapor recovery system;

2) Is maintained and operated so that it prevents visible liquid leaks, significant odors, and visible fumes in the liquid transfer and the vapor collection lines, and appurtenances during loading; and

3) Has been certified as required by Coast Guard regulations found at 33 CFR 154.

b) From May 1 to September 15, the regulatory control period, every owner or operator of a marine terminal subject to the requirements of this Subpart shall load gasoline or crude oil only into marine vessels that are:

1) Equipped with vapor collection equipment that has been certified as required by Coast Guard regulations found at 46 CFR 39;

2) Connected to the vapor collection system; and

3) Vapor-tight as described in the following subsections (b)(3)(A), (b)(3)(B), (b)(3)(C), or (b)(3)(D) of this Section:

A) The owner or operator of the marine terminal shall load each marine vessel with a vacuum assisted vapor collection system, instrumented in such a way that the pump(s) transferring gasoline or crude oil to the marine vessel will not operate unless the vapor collection system is properly connected and properly operating.

B) As an alternative to subsection (b)(3)(A) of this Section, the owner or operator of the marine terminal shall obtain documentation as described in Section 219.770(b) of this Subpart that the marine vessel has been vapor-tightness tested within either the preceding 12 months or the preceding 14 months, if the test is being conducted as part of the Coast Guard's reinspection of the vessel required under 46 CFR 31.10-17, using Method 21 of Part 60, Appendix A, incorporated by reference at Section 219.112 of this Part, as described in Section 219.768(b) of this Subpart.

C) If there is no documentation of a successful leak test conducted on the marine vessel in either the preceding 12 months or in the preceding 14 months, if the test is being conducted as part of the Coast Guard's reinspection of the vessel required under 46 CFR

31.10-17, the owner or operator of the marine terminal shall require that a leak test of the marine vessel be conducted during the final 20 percent of loading of the marine vessel or shall not load the vessel. The test shall be conducted when the marine vessel is being loaded at the maximum liquid transfer rate for that transfer operation. The owner or operator of the marine terminal shall require that the documentation described in Section 219.770(b) of this Subpart is completed prior to departure of the vessel.

D) If the marine vessel has failed its most recent vapor-tightness leak test at the marine terminal, before the marine vessel can be loaded, the owner or operator of the marine terminal shall require that the owner or operator of the marine vessel provide documentation that the leaks detected during the previous vapor-tightness leak test have been repaired and that the marine vessel has been vapor-tightness tested since the leak(s) has been repaired pursuant to subsection (b)(3)(B) of this Section.

c) As an alternative to the control requirements of subsections (a) and (b) of this Section, an owner or operator of a marine terminal subject to the control requirements of this Subpart may comply by showing:

1) Operation of a vapor collection and control system for the loading of gasoline or crude oil from marine vessels in accordance with the regulations adopted by the USEPA pursuant to Sections 112(d) or 183(f) of the CAA;

2) Reduction of VOM emissions equivalent to the levels in Appendix E of this Part through a federally enforceable emission reduction plan; or

3) An alternate procedure to those described that has been approved by the Agency and the USEPA in a federally enforceable permit or as a SIP revision.

d) Nothing in this Subpart shall supersede any U.S. Coast Guard regulation that is more stringent than that contained in this Subpart.

(Source: Added at 18 Ill. Reg. 16415, effective October 25, 1994)

Section 219.764 Compliance Certification

By May 1, 1996, or upon initial startup or upon change in method of compliance, the owner or operator of a source subject to the requirements of this Subpart must certify compliance with the requirements of this Subpart by submitting to the Agency the following:

a) If complying with Sections 219.762(a) and (b), or (c)(1), or (c)(3) of this Subpart:

1) The type of vapor collection and control system utilized;

2) The date the system was installed;

3) A demonstration that the vapor collection and control system achieves an overall efficiency of 95%;

4) A copy of the U.S. Coast Guard certification required under 33 CFR 154; and

5) The location (including the contact person's name, address, and telephone number) of the records required by Section 219.770 of this Subpart.

b) If complying with Section 219.762(c)(2) of this Subpart, a federally enforceable emission reduction plan.

c) If not loading during the 1996 regulatory control period or the 1996 and 1997 regulatory control periods, a statement that the source will not be loading gasoline or crude oil, the regulatory control period affected, and a date certain when the requirements of subsection (a) above will be met. Further, if the owner or operator is also required to comply with the control requirements for marine vessel loading adopted pursuant to Section 112(d) or Section 183(f) of the CAA, then the above statement of not loading may extend to subsequent regulatory control periods until installment and operation of the control equipment is required under Section 112(d) or Section 183(f) of the CAA.

(Source: Added at 18 Ill. Reg. 16415, effective October 25, 1994)

Section 219.766 Leaks

The owner or operator of a marine terminal shall comply with the requirements of Section 219.445 of this Part with respect to all equipment associated with the vapor collection and control system required by Section 219.762(a) of this Subpart.

(Source: Added at 18 Ill. Reg. 16415, effective October 25, 1994)

Section 219.768 Testing and Monitoring

a) Compliance with Section 219.762(a)(2) of this Subpart shall be determined by visual inspection and by the leak detection methods contained in Section 219.105(g) of this Part.

b) If the control device used to comply with Section 219.762(a)(1) of this Subpart is a flare, compliance shall be determined by methods described in Section 219.429(c) of this Part.

c) For all other control devices used to comply with Section 219.762(a)(1) of this Subpart, compliance shall be determined by methods described in Section 219.105(d) and (f) of this Part.

d) Compliance with Section 219.762(b)(3) of this Subpart shall be determined by one of the methods described in this Section:

1) A marine vessel loaded in accordance with Section 219.762(b)(3)(A) of this Subpart through the use of a vacuum assisted vapor collection system is assumed to be vapor-tight for the purposes of this Subpart.

2) A vapor-tightness test for marine vessels shall be conducted to include the final 20 percent of loading of each product tank of the marine vessel, and it shall be applied to any potential sources of vapor leaks on the vessel pursuant to Method 21 of 40 CFR 60, Appendix A, incorporated by reference at Section 219.112 of this Part. A reading of 10,000 ppmv or greater as methane shall constitute a leak.

3) As an alternative to subsection (d)(2) of this Section, an owner or operator of a marine terminal may use the vapor-tightness test described in 40 CFR 61.304(f), incorporated by reference at Section 219.112 of this Part.

e) When in the opinion of the Agency or USEPA it is necessary to conduct testing to demonstrate compliance with or verify effectiveness of the vapor collection and control system required by Section 219.762(a), (c)(1), or (c)(3) of this Subpart, the owner or operator of a marine terminal shall, at its own expense, conduct such tests in accordance with the applicable test methods and procedures specified in subsections (a), (b), or (c) of this Section, as applicable.

f) An owner or operator of a marine terminal planning to conduct a VOM emissions test to demonstrate compliance with Sections 219.762(a), (c)(1), or (c)(3) of this Subpart shall notify the Agency of that intent not less than 30 days before the planned initiation of the tests so that the Agency may observe the test.

(Source: Added at 18 Ill. Reg. 16415, effective October 25, 1994)

Section 219.770 Recordkeeping and Reporting

a) The owner or operator of sources complying with Sections 219.762(a) and (b), or (c)(1), or (c)(3) of this Subpart shall maintain records regarding the marine terminal, and each time a marine vessel is loaded during the regulatory control period. The records shall include but are not limited to:

1) The date(s) and the time(s) at which the marine vessel was loaded from the marine terminal;

2) The name, type, identification number, and owner of the vessel loaded;

3) The type and amount of liquid loaded into the marine vessel;

4) Records of any leaks found, repair attempts, and the results of the required fugitive monitoring and maintenance program, including appropriate

dates, test methods, instrument readings, repair results, and corrective action taken as required by Sections 219.762(a)(2) and 219.766 of this Subpart;

5) A copy of the Coast Guard certification demonstrating that the marine terminal's vapor collection and control system has been certified as required by Coast Guard regulations found at 33 CFR 154; and

6) A copy of the Coast Guard certification demonstrating that the marine vessel has been inspected and certified as required by Coast Guard regulations found at 46 CFR 39. If a copy of the Coast Guard certificate is not available at the time of loading, then the date that the marine vessel was last inspected and the authorization that the marine vessel has functioning vapor control equipment must be recorded from the certificate. Further, a copy of the certificate must be obtained by the owner or operator of the marine terminal within 21 days after the loading event.

b) Owners or operators complying with Sections 219.762(b)(3)(B), (b)(3)(C), or (b)(3)(D) shall additionally maintain the following records concerning the vapor-tightness of the marine vessel:

1) Test title;

2) Owner of the marine vessel tested;

3) The identification number of the marine vessel tested;

4) Testing location;

5) Tester name and signature;

6) Witnessing inspector, name, signature, and affiliation; and

7) Test results.

c) Owners or operators complying with the requirements of Section 219.762(c)(2) of this Subpart shall maintain records of daily product volumes loaded to demonstrate that the applicable emission reduction specified in Appendix E of this Part has been achieved.

d) Owners or operators certifying compliance under Section 219.764(c) shall maintain the records specified in subsections (a)(1), (a)(2), and (a)(3) above.

e) All records required by subsections (a), (b), (c), and (d) of this Section shall be maintained for at least three years and shall be made available to the Agency upon request.

(Source: Added at 18 Ill. Reg. 16415, effective October 25, 1994)

SUBPART HH: MOTOR VEHICLE REFINISHING

Section 219.780 Emission Limitations

a) Except as provided in Section 219.782 of this Subpart, no owner or operator of a motor vehicle refinishing operation shall coat motor vehicles, mobile equipment, or their parts and components, unless all coatings, except touch-up coatings, never exceed the VOM content limitations in this Section, expressed as units of VOM per volume of coating applied at each coating applicator, minus water and any compounds that are specifically exempted from the definition of VOM. The VOM content limitations are as follows:

		kg/l	(lb/gal)
1)	Pretreatment wash primer	0.78	(6.5)
2)	Precoat	0.66	(5.5)
3)	Primer/primer surfacer coating	0.58	(4.8)
4)	Primer sealer	0.55	(4.6)
5)	Topcoat system or basecoat/clearcoat	0.60	(5.0)
6)	Three or four stage topcoat system	0.63	(5.2)
7)	Specialty coatings	0.84	(7.0)
8)	Anti-glare/safety coating	0.84	(7.0)

b) All coating shall be used according to manufacturer's specifications. If a coating requires the addition of a reducer, hardener, or other additive, in some combination, this addition must not cause the coating, as applied, to exceed the applicable VOM content limitation.

c) Specialty coatings shall represent no more than 5 percent, by volume, of all coatings applied at a source on a monthly basis.

d) The following equations shall be used to calculate the VOM content of topcoat systems:

1) The VOM content of basecoat/clearcoat systems shall be calculated in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM),

according to the following equation:

$$VOM\ T_{bc/cc} = (VOM_{bc} + 2\ VOM_{cc})/3$$

Where:

$VOM\ T_{bc/cc}$ = The weighted average of the VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), in the basecoat (bc) and clearcoat (cc) system;

VOM_{bc} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of any given basecoat; and

VOM_{cc} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of any given clearcoat.

2) The VOM content for a three stage coating system shall be calculated in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), according to the following formula:

$$VOM\ T_{ms} = (VOM_{bc} + VOM_{mc} + 2\ VOM_{cc})/4$$

Where:

$VOM\ T_{ms}$ = The weighted average of the VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), in the basecoat, midcoat and clearcoat system;

VOM_{bc} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of any given basecoat;

VOM_{mc} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of any given midcoat; and

VOM_{cc} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of any given clearcoat.

3) The VOM content for a four stage coating system shall be calculated in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), according to the following formula:

$$VOM\ T_{ms} = (VOM_{bc} + VOM_{mc1} + VOM_{mc2} + 2\ VOM_{cc})/5$$

Where:

$VOM\ T_{ms}$ = The weighted average of the VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), in the basecoat, midcoats and clearcoat system;

VOM_{bc} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of any given basecoat;

VOM_{mc1} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of the first midcoat;

VOM_{mc2} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of the second midcoat; and

VOM_{cc} = The VOM content, as applied, in units of kg VOM/l (lbs VOM/gal) of coating, (minus water and any compounds which are specifically exempted from the definition of VOM), of any given clearcoat.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.782 Alternative Control Requirements

As an alternative to complying with the VOM content limitations in Section 219.780 of this Subpart, the owner or operator of a motor vehicle refinishing operation may operate control equipment that reduces VOM emissions at the source by at least 90 percent as provided in either subsection (a) or (b) of this Section.

a) An owner or operator may operate an afterburner or carbon adsorber; or

b) An owner or operator may use an equivalent alternative control plan, other than an afterburner or carbon adsorber, if approved by the Agency and USEPA through federally enforceable permit conditions.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.784 Equipment Specifications

Every owner or operator of a motor vehicle refinishing operation, unless the source uses less than 20 gallons of coating per calendar year from all motor vehicle refinishing operations combined, shall:

a) Coat motor vehicles, mobile equipment, or their parts and components using one of the following coating applicators:

  1) Electrostatic spray equipment calibrated, operated and maintained in accordance with the manufacturer's specifications;

  2) High Volume Low Pressure (HVLP) spray equipment calibrated, operated and maintained in accordance with the manufacturer's specifications; or

  3) An equivalent coating applicator technology that is demonstrated by the manufacturer to achieve transfer efficiency comparable to the HVLP spray equipment technology listed in subsection (a)(2) of this Section for a comparable operation, and for which written approval has been obtained from USEPA. The owner or operator must maintain documentation of USEPA's approval at the motor vehicle refinishing operation; and

b) Clean all coating applicators with a device that:

  1) Recirculates solvent during the cleaning process;

  2) Collects spent solvent so it is available for disposal or recycling; and

  3) Minimizes evaporation of solvents during cleaning, rinsing, draining, and storage.

(Source: Amended at 37 Ill. Reg. 1722, effective January 28, 2013)

Section 219.786 Surface Preparation Materials

Every owner or operator of a motor vehicle refinishing operation only shall use surface preparation materials that never exceed the following VOM content limitations for the specified substrate:

		kg/l	(lb/gal)
a)	Plastic parts	0.78	(6.5)
b)	Other substrates	0.17	(1.4)

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.787 Work Practices

a) Every owner or operator of a motor vehicle refinishing operation shall ensure that fresh and spent solvent, cloth or paper used to apply solvents for surface preparation or cleanup, waste paint, and sludge are stored in closed containers.

b) Every owner or operator of a motor vehicle refinishing operation that is exempt from the equipment specifications in Section 219.784 of this Subpart because it uses less than 20 gallons of coating per year shall direct solvent used to clean coating applicator equipment and paint lines into a container for proper disposal or recycling.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.788 Testing

a) Upon request by the Agency, the owner or operator of a motor vehicle refinishing operation shall, at its own expense, conduct tests to demonstrate compliance with Sections 219.780, 219.782 or 219.786 of this Subpart, in accordance with the applicable test methods and procedures specified in Section 219.105 of this Part and shall:

1) Notify the Agency 30 days prior to conducting such tests; and

2) Submit all test results to the Agency within 45 days after conducting the requisite tests.

b) For purposes of this Section, surface preparation materials shall be treated as coatings.

c) Nothing in this Section shall limit the authority of USEPA pursuant to the Clean Air Act, as amended, to require testing, or shall affect the authority of USEPA under Section 114 of the Clean Air Act (42 U.S.C. 7414 (1990)).

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.789 Monitoring and Recordkeeping for Control Devices

a) Every owner or operator of a motor vehicle refinishing operation that complies with this Subpart pursuant to Section 219.782 of this Subpart shall:

1) Install and operate equipment to continuously monitor each control device as specified in Section 219.105(d)(2)(A) of this Part;

2) Keep records of parameters for control devices as monitored pursuant to subsection (a)(1) of this Section;

3) Keep logs of operating time of the control device and monitoring equipment;

4) Keep logs of maintenance of the control device and monitoring equipment; and

5) Maintain all records required in this Section for the most recent consecutive three year period and make all such records available to the Agency immediately upon request.

b) An owner or operator may monitor with an alternative method or monitor other parameters than specified in subsection (a)(1) of this Section, if approved by the Agency and USEPA through federally enforceable permit conditions.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.791 Compliance Date

Every owner or operator of a motor vehicle refinishing operation shall comply with the requirements of this Subpart by March 15, 1996, upon modification or upon initial startup.

(Source: Added at 19 Ill. Reg. 6958, effective May 9, 1995)

SUBPART II: FIBERGLASS BOAT MANUFACTURING MATERIALS

Section 219.890 Applicability

a) Except as provided in subsection (b) of this Section, on and after May 1, 2012, the requirements of this Subpart shall apply to the owners or operators of sources that manufacture hulls or decks of boats from fiberglass, or that build molds to make hulls or decks of boats from fiberglass, and that emit 6.8 kg/day (15 lbs/day) or more of VOM, calculated in accordance with Section 219.894(a)(1)(B), from open molding resin and gel coat operations, resin and gel coat mixing operations, and resin and gel coat application equipment cleaning operations, in the absence of air pollution control equipment. If a source is subject to this Subpart based upon such criteria, the limitations of this Subpart shall apply to the manufacture of all fiberglass boat parts at the source.

b) Notwithstanding subsection (a) of this Section, the requirements of this Subpart shall not apply to the following:

1) Surface coatings applied to fiberglass boats;

2) Industrial adhesives used in the assembly of fiberglass boats. Polyester resin putties used to assemble fiberglass parts shall not be considered industrial adhesives for purposes of this exclusion;

3) Closed molding operations.

c) If a source is or becomes subject to one or more of the limitations in this Subpart, the source is always subject to the applicable provisions of this Subpart.

d) The owner or operator of a source exempt from the limitations of this Subpart because of the criteria in this Section is subject to the recordkeeping and reporting requirements specified in Section 219.894(a) of this Subpart.

(Source: Added at 34 Ill. Reg. 14326, effective September 14, 2010)

Section 219.891 Emission Limitations and Control Requirements

a) Except as provided in subsection (f) of this Section, no owner or operator of a source subject to the requirements of this Subpart shall use a subject resin or gel coat at the source unless the resin and gel coat comply with subsection (b)(1) or (b)(2), (c), or (d) of this Section, as well as with subsections (e), (g), and (h) of this Section. For sources complying pursuant to subsection (b) or (c) of this Section, if the non-monomer VOM content of a resin or gel coat exceeds 5 percent, by weight, the excess non-monomer VOM shall be added to the monomer VOM content of the resin or gel coat. The excess non-monomer VOM shall be calculated in accordance with the following equation:

$$\begin{array}{c}\text{Excess Non-}\\ \text{Monomer VOM}\end{array} = \begin{array}{c}\text{Non-monomer VOM Content}\\ \text{– 5 percent, by weight}\end{array}$$

b) VOM Content Limitations

1) Except as provided in subsection (e) of this Section, the monomer VOM content of a subject resin or gel coat shall not exceed the following limitations:

	Weighted average monomer VOM content (weight percent)
A) Production resin	
i) Atomized spray	28

	ii)	Non-atomized	35
B)	Pigmented gel coat		33
C)	Clear gel coat		48
D)	Tooling resin		
	i)	Atomized	30
	ii)	Non-atomized	39
E)	Tooling gel coat		40

2) Except as provided in subsection (e) of this Section, the weighted average monomer VOM content of a subject resin or gel coat shall not exceed the applicable limitation set forth in subsection (b)(1) of this Section on a 12-month rolling average basis. Equation 1 shall be used to determine the weighted average monomer VOM content for resin and gel coat materials.

Equation 1:

$$\text{Weighted Average Monomer VOM Content} = \frac{\sum_{i=1}^{n} M_i VOM_i}{\sum_{i=1}^{n} M_i}$$

where:

M_i = Mass of open molding resin or gel coat (i) used in the past 12 months in an operation, in megagrams;

VOM_i = Monomer VOM content, by weight percent, of open molding resin or gel coat (i) used in the past 12 months in an operation;

n = Number of different open molding resins or gel coats used in the past 12 months in an operation.

c) Emissions Averaging Alternative. The owner or operator of a source subject to the requirements of this Subpart may elect to include some or all of the subject resin and gel coat operations at the source in the emissions averaging alternative. Resin and gel coat operations utilizing the emissions averaging alternative shall comply with a source-specific monomer VOM mass emission limit on a 12-month rolling average basis, calculated at the end of each calendar month. All subject resin and gel coat operations that do not utilize the emissions averaging alternative shall comply with the requirements in subsection (b) or (d) of this Section, as well as with all other applicable requirements in this Section.

1) The owner or operator of a source subject to this subsection (c) shall use Equation 2 to determine the source-specific monomer VOM mass emission limit for resin and gel coats included in the emissions average:

Equation 2:

$$\text{Monomer VOM Limit} = 46(M_R) + 159(M_{PG}) + 291(M_{CG}) + 54(M_{TR}) + 214(M_{TG})$$

where:

Monomer VOM Limit = Total allowable monomer VOM that can be emitted from the open molding operations included in the average, expressed in kilograms per 12-month period;

M_R = Mass of production resin used in the past 12 months, excluding any materials that are exempt, expressed in megagrams (Mg);

M_{PG} = Mass of pigmented gel coat used in the past 12 months, excluding any materials that are exempt, expressed in Mg;

M_{CG} = Mass of clear gel coat used in the past 12 months, excluding any materials that are exempt, expressed in Mg;

M_{TR} = Mass of tooling resin used in the past 12 months, excluding any materials that are exempt, expressed in Mg;

M_{TG} = Mass of tooling gel coat used in the past 12 months, excluding any materials that are exempt, expressed in Mg.

The numerical coefficients associated with each term on the right hand side of Equation 2 are the allowable monomer VOM emission rates for that particular material in units of kg VOM/Mg of material used.

2) At the end of the first 12-month averaging period, and at the end of each subsequent month, the owner or operator of a source subject to this subsection (c) shall use Equation 3 to calculate the monomer VOM emissions from the resin and gel coat operations included in the emissions average. The monomer VOM emissions calculated using Equation 3 shall not exceed the monomer VOM limit calculated using Equation 2.

Equation 3:

$$\text{Monomer VOM Emissions} = (PV_R)(M_R) + (PV_{PG})(M_{PG}) + (PV_{CG})(M_{CG}) + (PV_{TR})(M_{TR}) + (PV_{TG})(M_{TG})$$

where:

Monomer VOM Emissions = Monomer VOM emissions calculated using the monomer VOM emission equations for each operation included in the average, expressed in kg;

PV_R = Weighted-average monomer VOM emission rate for production resin used in the past 12 months, expressed in kg/Mg, calculated in accordance with Equation 4 in subsection (c)(3);

M_R = Mass of production resin used in the past 12 months, expressed in Mg;

PV_{PG} = Weighted-average monomer VOM emission rate for pigmented gel coat used in the past 12 months, expressed in kg/Mg, calculated pursuant to Equation 4;

M_{PG} = Mass of pigmented gel coat used in the past 12 months, expressed in Mg;

PV_{CG} = Weighted-average monomer VOM emission rate for clear gel coat used in the past 12 months, expressed in kg/Mg, calculated pursuant to Equation 4;

M_{CG} = Mass of clear gel coat used in the past 12 months, expressed in Mg;

PV_{TR} = Weighted-average monomer VOM emission rate for tooling resin used in the past 12 months, expressed in kg/Mg, calculated pursuant to Equation 4;

M_{TR} = Mass of tooling resin used in the past 12 months, expressed in Mg;

PV_{TG} = Weighted-average monomer VOM emission rate for tooling gel coat used in the past 12 months, expressed in kg/Mg, calculated pursuant to Equation 4;

M_{TG} = Mass of tooling gel coat used in the past 12 months, expressed in Mg.

3) For purposes of Equation 3, the owner or operator of a source subject to this subsection (c) shall use Equation 4 below to calculate the weighted-average monomer VOM emission rate for the previous 12 months for each resin and gel coat operation included in the emissions average, except as provided in subsection (e) of this Section.

Equation 4:

$$PV_{OP} = \frac{\sum_{i=1}^{n} M_i PV_i}{\sum_{i=1}^{n} M_i}$$

where:

PV_{OP} = Weighted-average monomer VOM emission rate for each open molding operation (PV_R, PV_{PG}, PV_{CG}, PV_{TR}, and PV_{TG}) included in the average, expressed in kg of monomer VOM per Mg of material applied;

M_i = Mass of resin or gel coat (i) used within an operation in the past 12 months, expressed in Mg;

n = Number of different open molding resins and gel coats used within an operation in the past 12 months;

PV_i = The monomer VOM emission rate for resin or gel coat (i) used within an operation in the past 12 months, expressed in kg of monomer VOM per Mg of material applied. The monomer VOM emission rate formulas in subsection (c)(4) of this Section shall be used to compute PV_i. If a source includes filled resins in the emissions average, the source shall use the value of PV_F, calculated using Equation 5 in subsection (e)(3) of this Section, as the value of PV_i for those resins;

i = Subscript denoting a specific open molding resin or gel coat applied.

4) For purposes of Equation 4 and subsection (e)(3) of this Section, the following monomer VOM emission rate formulas shall apply. Such formulas calculate monomer VOM emission rates in terms of kg of monomer VOM per Mg of resin or gel coat applied. "VOM%" means the monomer VOM content as supplied, expressed as a weight percent value between 0 and 100 percent:

A) Production resin, tooling resin:

i) Atomized: $0.014 \times (\text{Resin VOM\%})^{2.425}$

ii) Atomized, plus vacuum bagging with roll-out: $0.01185 \times (\text{Resin VOM\%})^{2.425}$

iii) Atomized, plus vacuum bagging without roll-out: 0.00945 x (Resin VOM%)$^{2.425}$

iv) Nonatomized: 0.014 x (Resin VOM%)$^{2.275}$

v) Nonatomized, plus vacuum bagging with roll-out: 0.0110 x (Resin VOM%)$^{2.275}$

vi) Nonatomized, plus vacuum bagging without roll-out: 0.0076 x (Resin VOM%)$^{2.275}$

B) Pigmented gel coat, clear gel coat, tooling gel coat: 0.445 x (Gel Coat VOM%)$^{1.675}$

d) Capture System and Control Device Requirements. No owner or operator of a source subject to the requirements of this Subpart that is utilizing a capture system and control device for a subject resin or gel coat operation shall conduct that operation unless the following requirements are satisfied:

1) An afterburner or carbon adsorber is installed and operated that meets the limitations set forth in this subsection (d). The owner or operator may use an emissions control system other than an afterburner or carbon adsorber if that device complies with all limitations in this subsection (d), the owner or operator submits a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for the control device, and the plan is approved by the Agency and approved by USEPA as a SIP revision;

2) The VOM emissions at the outlet of the control device meet an emissions limitation determined using Equation 2 in subsection (c)(1) of this Section. In Equation 2, however, instead of using the mass of each material used over the past 12 months to determine the emission limitation, the owner or operator shall use the mass of each material used during the applicable control device performance test;

3) The owner or operator complies with all testing and monitoring requirements set forth in Section 219.892 of this Subpart.

e) Filled Resins. For all filled production and tooling resins, the owner or operator of a source subject to this Subpart shall adjust the monomer VOM emission rates determined pursuant to subsections (b) and (c) of this Section using Equation 5 in subsection (e)(3). If complying pursuant to subsection (b), the emission rate determined using Equation 5 shall not exceed the limitations set forth in subsections (e)(1) and (e)(2) of this Section. If complying pursuant to subsection (c), the value of PV_F, calculated using Equation 5, shall be used as the value of PV_i in Equation 4, as set forth in subsection (c)(3) of this Section. If the non-monomer VOM content of a filled resin exceeds 5 percent, by weight, based on the unfilled resin, the excess non-monomer VOM shall be added to the monomer

VOM content in accordance with the equation set forth in subsection (a).

1) Tooling Resin: 54 kg (119.1 lbs) monomer VOM/Mg filled resin applied;

2) Production Resin: 46 kg (101.4 lbs) monomer VOM/Mg filled resin applied;

3) Equation 5:

$$PV_F = PV_U \times \frac{(100 - \%Filler)}{100}$$

where:

PV_F = The as-applied monomer VOM emission rate for the filled production resin or tooling resin, expressed in kg monomer VOM per Mg of filled material;

PV_U = The monomer VOM emission rate for the unfilled resin, before filler is added, expressed in kg monomer VOM per Mg, as calculated using the formulas in Section 219.891(c)(4) of this Subpart;

% Filler = The weight-percent of filler in the as-applied filled resin system.

f) The limitations in subsections (a) through (e) of this Section shall not apply to the following materials. These materials shall instead comply with the applicable requirements set forth in subsections (f)(1) through (f)(3).

1) Production resins, including skin coat resins, that must meet specifications for use in military vessels or must be approved by the United States Coast Guard for use in the construction of lifeboats, rescue boats, and other life-saving appliances approved under 46 CFR Subchapter Q, incorporated by reference in Section 219.112 of this Part, or for use in the construction of small passenger vessels regulated by 40 CFR Subchapter T, incorporated by reference in Section 219.112 of this Part. The owner or operator of a source subject to this Subpart shall apply all such resins with nonatomizing resin application equipment;

2) Production and tooling resins, and pigmented, clear, and tooling gel coats used for part or mold repair and touch ups. These materials shall not exceed 1 percent, by weight, of all resins and gel coats used at a subject source on a 12-month rolling average basis;

3) Pure, 100 percent vinylester resins used for skin coats. The owner or operator of a source subject to this Subpart shall apply these resins with non-atomizing resin application equipment, and the total amount of the

resins shall not exceed 5 percent, by weight, of all resins used at the subject source on a 12-month rolling-average basis.

g) No owner or operator of a source subject to this Subpart shall use VOM-containing cleaning solutions to remove cured resins and gel coats from fiberglass boat manufacturing application equipment. Additionally, no owner or operator shall use VOM-containing cleaning solutions for routine cleaning of application equipment unless:

1) The VOM content of the cleaning solution is less than or equal to 5 percent, by weight; or

2) The composite vapor pressure of the cleaning solution is less than or equal to 0.50 mmHg at 68°F.

h) No owner or operator of a source subject to this Subpart shall use resin or gel coat mixing containers with a capacity equal to or greater than 208 liters (55 gallons), including those used for on-site mixing of putties and polyputties, unless such containers have covers with no visible gaps in place at all times, except when material is being manually added to or removed from a container or when mixing or pumping equipment is being placed in or removed from a container.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.892 Testing and Monitoring Requirements

a) Testing to demonstrate compliance with the requirements of Section 219.891 of this Subpart shall be conducted by the owner or operator by May 1, 2012. Thereafter, testing shall be conducted within 90 days after a request by the Agency, or as otherwise specified in this Subpart. The testing shall be conducted at the expense of the owner or operator and the owner or operator shall notify the Agency in writing 30 days in advance of conducting the testing to allow the Agency to be present during testing.

b) Testing to demonstrate compliance with the monomer VOM content limitations for resin and gel coat materials in Section 219.891(b) of this Subpart shall be conducted upon request of the Agency, or as otherwise specified in this Subpart, in accordance with SCAQMD 312-91, incorporated by reference in Section 219.112 of this Part.

c) The owner or operator of a source complying with this Subpart pursuant to Section 219.891(d) shall comply with the following:

1) By May 1, 2012, or upon initial start-up, whichever is later, and upon start-up of a new control device, conduct an initial performance test of the control device in accordance with this subsection (c) that demonstrates compliance with the emission limitation determined pursuant to Section 219.891(d).

2) Subsequent to the initial performance test described in subsection (c)(1) of this Section, conduct at least one performance test per calendar year. Performance tests used to demonstrate compliance with Section 219.891(d) shall be conducted at least six months apart, unless the performance test is being conducted following an exceedance of operating parameters as described in subsection (c)(3) of this Section, or per a request by the Agency.

3) Monitor and record relevant operating parameters, including the control efficiency of the control device and the amount of materials used in the fiberglass boat manufacturing process, during each control device performance test used to demonstrate compliance with Section 219.891(d). The owner or operator shall continue to operate the fiberglass boat manufacturing process within the parameters until another performance test is conducted that demonstrates compliance with Section 219.891(d). The owner or operator shall monitor the parameters at all times when the control device is in operation. If the fiberglass boat manufacturing process exceeds any operating parameter by more than 10 percent, the owner or operator shall conduct additional performance testing in accordance with this Section within 10 operating days after the exceedance;

4) The methods and procedures of Section 219.105(d) and (f) shall be used for testing to demonstrate compliance with the requirements of Section 219.891(d) of this Subpart, as follows:

A) To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, appendix A, incorporated by reference at Section 219.112 of this Part. The sampling sites for determining efficiency in reducing VOM from the dryer exhaust shall be located between the dryer exhaust and the control device inlet, and between the outlet of the control device and the exhaust to the atmosphere;

B) To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, appendix A, incorporated by reference at Section 219.112 of this Part;

C) To determine the VOM concentration of the exhaust stream entering and exiting the control device, Method 25 or 25A, as appropriate, 40 CFR 60, appendix A, incorporated by reference at Section 219.112 of this Part. For thermal and catalytic afterburners, Method 25 must be used except under the following circumstances, in which case Method 25A must be used:

i) The allowable outlet concentration of VOM from the control device is less than 50 ppmv, as carbon;

ii) The VOM concentration at the inlet of the control device and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon; and

iii) Due to the high efficiency of the control device, the anticipated VOM concentration at the control device exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest shall be conducted using either Method 25 or 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest again using Method 25.

D) Notwithstanding the criteria or requirements in Method 25, which specifies a minimum probe temperature of 129°C (265°F), the probe must be heated to at least the gas stream temperature of the dryer exhaust, typically close to 176.7°C (350°F); and

E) During testing, the fiberglass boat manufacturing operation shall be operated at representative operating conditions and flow rates.

5) If an afterburner is used to demonstrate compliance, the owner or operator shall:

A) Install, calibrate, operate, and maintain temperature monitoring devices with an accuracy of 3°C or 5°F on the emissions control system in accordance with Section 219.105(d)(2) of this Part and in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the emissions control system is operating; and

B) Install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring devices, such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor.

6) If a carbon adsorber is used to demonstrate compliance, the owner or operator shall use Agency and USEPA approved continuous monitoring equipment that is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use. The

continuous monitoring equipment shall monitor the VOM concentration of each carbon adsorption bed exhaust or the exhaust of the bed next in sequence to be desorbed.

7) If an emissions control system other than an afterburner or carbon adsorber is used to demonstrate compliance, the owner or operator shall install, maintain, calibrate, and operate the monitoring equipment as set forth in the owner's or operator's plan approved by the Agency and USEPA pursuant to Section 219.891(d).

d) Testing to demonstrate compliance with the VOM content limitations for cleaning solutions in Section 219.891(g) of this Subpart, and with the non-monomer VOM content limitations for resin and gel coat materials in Section 219.891(a) of this Subpart, shall be conducted upon request of the Agency, or as otherwise specified in this Subpart, as follows:

1) The applicable test methods and procedures specified in Section 219.105(a) of this Part shall be used; provided, however, Method 24, incorporated by reference at Section 219.112 of this Part, shall be used to demonstrate compliance; or

2) For cleaning solvents, the manufacturer's specifications for VOM content may be used if the manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part; provided, however, Method 24 shall be used to determine compliance. In the event of any inconsistency between a Method 24 test and the manufacturer's specifications, the Method 24 test shall govern.

e) The owner or operator of a source subject to this Subpart and relying on the VOM content of the cleaning solution to comply with Section 219.891(g)(1) of this Subpart shall:

1) For cleaning solutions that are prepared at the source with equipment that automatically mixes cleaning solvent and water (or other non-VOM):

A) Install, operate, maintain, and calibrate the automatic feed equipment in accordance with manufacturer's specifications to regulate the volume of each of the cleaning solvent and water (or other non-VOM), as mixed; and

B) Pre-set the automatic feed equipment so that the consumption rates of the cleaning solvent and water (or other non-VOM), as applied, comply with Section 219.891(g)(1);

2) For cleaning solutions that are not prepared at the source with automatic feed equipment, keep records of the usage of cleaning solvent and water (or other non-VOM) as set forth in Section 219.894(g) of this Subpart.

f) Testing to demonstrate compliance with the VOM composite partial vapor pressure limitation for cleaning solvents set forth in Section 219.891(g) of this Subpart shall be conducted in accordance with the applicable methods and procedures set forth in Section 219.110 of this Part.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.894 Recordkeeping and Reporting Requirements

a) The owner or operator of a source exempt from the limitations of this Subpart because of the criteria in Section 219.890(a) of this Subpart shall:

1) By May 1, 2012, or upon initial start-up, whichever is later, submit a certification to the Agency that includes the following:

A) A declaration that the source is exempt from the requirements in this Subpart because of the criteria in Section 219.890(a);

B) Calculations that demonstrate that combined emissions of VOM from all subject fiberglass boat manufacturing operations (including solvents used for cleanup operations associated with the fiberglass boat manufacturing operation) at the source never equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment. To calculate daily emissions of VOM, the owner or operator shall determine the monthly emissions of VOM from fiberglass boat manufacturing operations at the source (including solvents used for cleanup operations associated with the fiberglass boat manufacturing operations) and divide the amount by the number of days during that calendar month that the fiberglass boat manufacturing operations were in operation;

2) Collect and record the following information and provide copies of the records to the Agency upon request:

A) The total pounds of all resins and gel coats used per calendar month;

B) The total gallons of all cleanup materials used per calendar month;

C) The VOM content of each resin, gel coat, and cleanup material used per calendar month;

D) The total VOM emissions, in pounds, for all resins, gel coats, and cleanup materials employed per calendar month, before the application of control systems and devices.

3) Notify the Agency of any record that shows that the combined emissions

of VOM from subject fiberglass boat manufacturing operations at the source, including related cleaning activities, ever equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment, within 30 days after the event occurs, and provide copies of the record upon request by the Agency.

b) All sources subject to the requirements of this Subpart shall:

1) By May 1, 2012, or upon initial start-up of the source, whichever is later, and upon start-up of a new fiberglass boat manufacturing operation at the source, submit a certification to the Agency that includes:

A) Identification of each subject fiberglass boat manufacturing operation as of the date of certification;

B) A declaration that all subject fiberglass boat manufacturing operations, including related cleaning operations, are in compliance with the requirements of this Subpart;

C) The limitation with which each subject fiberglass boat manufacturing operation will comply (i.e., the VOM content limitation, the emissions averaging alternative, or the emissions control system alternative);

D) Initial documentation that each subject fiberglass boat manufacturing operation will comply with the applicable limitation, including copies of manufacturer's specifications, test results (if any), formulation data, and calculations;

E) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;

F) A description of the practices and procedures that the source will follow to ensure compliance with the limitations in Section 219.891(h) of this Subpart;

G) A description of each fiberglass boat manufacturing operation exempt pursuant to Section 219.890(b) of this Subpart, if any;

H) A description of materials subject to Section 219.891(f) of this Subpart, if any, used in each fiberglass boat manufacturing operation;

2) At least 30 calendar days before changing the method of compliance in accordance with Section 219.891(b), (c), and (d), notify the Agency in writing of the change. The notification shall include a demonstration of compliance with the newly applicable subsection;

3) Notify the Agency in writing of any violation of the requirements of this Subpart within 30 days following the occurrence of the violation and provide records documenting the violation upon request by the Agency;

4) Retain all records required by this Section for at least three years and make those records available to the Agency upon request.

c) The owner or operator of a fiberglass boat manufacturing operation subject to the limitations of Section 219.891 of this Subpart and complying by means of Section 219.891(b) shall comply with the following.

1) By May 1, 2012, or upon initial start-up, whichever is later, submit a certification to the Agency that includes the name, identification number, and VOM content of each subject resin and gel coat as applied each day by each subject fiberglass boat manufacturing operation;

2) Collect and record the following information each day for each fiberglass boat manufacturing operation complying with Section 219.891(b):

A) The name, identification number, and VOM content of each subject resin and gel coat as applied each day by each fiberglass boat manufacturing operation; and

B) If complying with Section 219.891(b)(2), the mass of each open molding resin or gel coat as applied each month by each subject fiberglass boat manufacturing operation and the weighted average VOM content of all subject resins and gel coats as applied by each subject fiberglass boat manufacturing operation.

d) The owner or operator of a fiberglass boat manufacturing operation subject to the requirements of Section 219.891 of this Subpart and complying by means of Section 219.891(c) shall:

1) On and after May 1, 2012, collect and record the following information each month:

A) The amount of production resin, pigmented gel coat, clear gel coat, tooling resin, and tooling gel coat used in each subject fiberglass boat manufacturing operation;

B) The VOM content of each production resin, pigmented gel coat, clear gel coat, tooling resin, and tooling gel coat used in each subject fiberglass boat manufacturing operation;

C) Total monthly VOM emissions for all subject fiberglass boat manufacturing operations;

2) At the end of the first 12-month averaging period, and at the end of each

subsequent month, collect and record the following information:

A) The monomer VOM mass emission limit for all subject fiberglass boat manufacturing operations for the applicable 12-month averaging period, with supporting calculations;

B) The total actual emissions of VOM from all subject fiberglass boat manufacturing operations for the applicable 12-month averaging period.

e) The owner or operator of a fiberglass boat manufacturing operation subject to the requirements of Section 219.891 of this Subpart and complying by means of Section 219.891(d) shall:

1) By May 1, 2012, or upon initial start-up, whichever is later, and upon start-up of a new control device, submit a certification to the Agency that includes the following:

A) The type of control device used to comply with the requirements of Section 219.891(d);

B) The results of all tests and calculations necessary to demonstrate compliance with the requirements of Section 219.891(d); and

C) A declaration that the monitoring equipment required under Section 219.892 of this Subpart has been properly installed and calibrated according to manufacturer's specifications;

2) Within 90 days after conducting testing pursuant to Section 219.892, submit to the Agency a copy of all test results, as well as a certification that includes the following:

A) A declaration that all tests and calculations necessary to demonstrate whether the fiberglass boat manufacturing operation is in compliance with Section 219.891(d) have been properly performed;

B) A statement whether the fiberglass boat manufacturing operations are or are not in compliance with Section 219.891(d);

C) The emissions limitation applicable during the control device performance test, with supporting calculations;

D) The operating parameters of the fiberglass boat manufacturing process during testing, as monitored in accordance with Section 219.892;

3) Collect and record daily the following information for each fiberglass boat

manufacturing operation subject to the requirements of Section 219.891(d), and submit that information to the Agency upon request:

A) Afterburner or other approved control device monitoring data in accordance with Section 219.892 of this Subpart;

B) A log of operating time for the control device and monitoring equipment;

C) A maintenance log for the control device and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages;

D) Information to substantiate that the fiberglass boat manufacturing operation is operating in compliance with the parameters determined pursuant to Section 219.892.

f) The owner or operator of a source subject to the requirements in Section 219.891(f) of this Subpart shall collect and record the following information for each fiberglass boat manufacturing operation:

1) The name and identification number of each material subject to Section 219.891(f) as applied each day by each subject fiberglass boat manufacturing operation;

2) If subject to Section 219.891(f)(2), the amount of production and tooling resins, and pigmented, clear, and tooling gel coats used for part or mold repair and touch-ups, used each month at the subject source, and the total amount of all resins and gel coats used each month at the subject source;

3) If subject to Section 219.891(f)(3), the amount of pure, 100 percent vinylester resins used for skin coats each month at the subject source, and the total amount of all resins used each month at the subject source.

g) The owner or operator of a source subject to the requirements of Section 219.891 of this Subpart shall collect and record the following information for each cleaning solution used in each fiberglass boat manufacturing operation:

1) For each cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Section 219.891(g) of this Subpart and that is prepared at the source with automatic equipment:

A) The name and identification of each cleaning solution;

B) The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Section 219.892(d) of this Subpart;

C) Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);

D) The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;

E) The VOM content of the as-used cleaning solution, with supporting calculations; and

F) A calibration log for the automatic equipment, detailing periodic checks;

2) For each batch of cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Section 219.891(g), and that is not prepared at the source with automatic equipment:

A) The name and identification of each cleaning solution;

B) Date and time of preparation, and each subsequent modification, of the batch;

C) The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Section 219.892(d);

D) The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and

E) The VOM content of the as-used cleaning solution, with supporting calculations;

3) For each batch of cleaning solution for which the owner or operator relies on the vapor pressure of the cleaning solution to demonstrate compliance with Section 219.891(g):

A) The name and identification of each cleaning solution;

B) Date and time of preparation, and each subsequent modification, of the batch;

C) The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with Section 219.892(f) of this Subpart;

D) The total amount of each cleaning solvent, including water, used to prepare the as-used cleaning solution; and

E) The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with Section 219.110 of this Part.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

SUBPART JJ: MISCELLANEOUS INDUSTRIAL ADHESIVES

Section 219.900 Applicability

a) Except as provided in subsection (b) of this Section, on and after May 1, 2012, the requirements of this Subpart shall apply to miscellaneous industrial adhesive application operations at sources where the total actual VOM emissions from all such operations, including related cleaning activities, equal or exceed 6.8 kg/day (15 lbs/day), calculated in accordance with Section 219.904(a)(1)(B), in the absence of air pollution control equipment.

b) Notwithstanding subsection (a) of this Section:

1) The requirements of this Subpart shall not apply to miscellaneous industrial adhesive application operations associated with the following:

A) Aerospace coatings;

B) Metal furniture coatings;

C) Large appliance coatings;

D) Flat wood paneling coatings;

E) Paper, film, and foil coatings;

F) Lithographic printing;

G) Letterpress printing;

H) Flexible package printing;

I) Coil coating;

J) Fabric coating;

K) Rubber tire manufacturing.

2) The requirements of Section 219.901(b) through (e) of this Subpart shall not apply to the following:

A) Adhesives or adhesive primers being tested or evaluated in any research and development operation or quality assurance or analytical laboratory;

B) Adhesives or adhesive primers used in the assembly, repair, or manufacture of aerospace or undersea-based weapon systems;

C) Adhesives or adhesive primers used in medical equipment manufacturing operations;

D) Cyanoacrylate adhesive application operations;

E) Aerosol adhesive and aerosol adhesive primer application operations;

F) Operations using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities;

G) Operations using adhesives and adhesive primers that are supplied to the manufacturer in containers with a net volume of 0.47 liters (16 oz) or less, or a net weight of 0.45 kg (1 lb) or less.

c) If a miscellaneous industrial adhesive application operation at a source is or becomes subject to one or more of the limitations in this Subpart, the miscellaneous industrial adhesive application operation is always subject to the applicable provisions of this Subpart.

d) The owner or operator of a source exempt from the emission limitations and control requirements of this Subpart because of the criteria in subsection (a) of this Section is subject to the recordkeeping and reporting requirements specified in Section 219.904(a) of this Subpart.

(Source: Added at 34 Ill. Reg. 14326, effective September 14, 2010)

Section 219.901 Emission Limitations and Control Requirements

a) The owner or operator of a source subject to the requirements of this Subpart shall comply with the limitations in subsection (b), (c), or (d) of this Section, as well as with the limitations in subsections (e) and (f) of this Section. Notwithstanding this requirement, sources subject to Section 219.900(b)(2) shall comply with the limitations in subsection (f) of this Section only.

b) The owner or operator of adhesive application operations listed in this subsection (b) shall comply with the following VOM emission limitations, minus water and any compounds that are specifically exempted from the definition of VOM, as applied. If an adhesive is used to bond dissimilar substrates together, the substrate category with the highest VOM emission limitation shall apply:

			kg VOM/l adhesive or adhesive primer applied	lb VOM/gal adhesive or adhesive primer applied
1)	General adhesive application operations			
	A)	Reinforced plastic composite	0.200	(1.7)
	B)	Flexible vinyl	0.250	(2.1)
	C)	Metal	0.030	(0.3)
	D)	Porous material (except wood)	0.120	(1.0)
	E)	Rubber	0.250	(2.1)
	F)	Wood	0.030	(0.3)
	G)	Other substrates	0.250	(2.1)
2)	Specialty adhesive application operations			
	A)	Ceramic tile installation	0.130	(1.1)
	B)	Contact adhesive	0.250	(2.1)
	C)	Cove base installation	0.150	(1.3)
	D)	Indoor floor covering installation	0.150	(1.3)
	E)	Outdoor floor covering installation	0.250	(2.1)
	F)	Installation of perimeter bonded sheet flooring	0.660	(5.5)
	G)	Metal to urethane/rubber molding or casting	0.850	(7.1)
	H)	Motor vehicle adhesive	0.250	(2.1)
	I)	Motor vehicle weatherstrip adhesive	0.750	(6.3)
	J)	Multipurpose construction	0.200	(1.7)
	K)	Plastic solvent welding (acrylonitrile butadiene styrene (ABS) welding)	0.400	(3.3)
	L)	Plastic solvent welding (except ABS welding)	0.500	(4.2)

M)	Sheet rubber lining installation	0.850	(7.1)
N)	Single-ply roof membrane installation/repair (except ethylene propylenediene monomer (EPDM) roof membrane)	0.250	(2.1)
O)	Structural glazing	0.100	(0.8)
P)	Thin metal laminate	0.780	(6.5)
Q)	Tire repair	0.100	(0.8)
R)	Waterproof resorcinol glue	0.170	(1.4)

3) Adhesive primer application operations

A)	Motor vehicle glass bonding primer	0.900	(7.5)
B)	Plastic solvent welding adhesive primer	0.650	(5.4)
C)	Single-ply roof membrane adhesive primer	0.250	(2.1)
D)	Other adhesive primer	0.250	(2.1)

c) No owner or operator of a source subject to this Subpart shall operate a miscellaneous industrial adhesive application operation unless the daily-weighted average VOM content of subject adhesives as applied each day by the operation, calculated in accordance with subsection (c)(1) of this Section, is less than or equal to the emissions limitation calculated in accordance with subsection (c)(2) of this Section.

1) Weighted Average of VOM Content of Adhesives Applied Each Day

$$VOM_{WA} = \frac{\sum_{i=1}^{n} V_i VOM_i}{\sum_{i=1}^{n} V_i}$$

where:

VOM_{WA} = The weighted average VOM content in units of kg (lbs) VOM per volume in l (gal) of all subject adhesives as applied each day;

i = Subscript denoting a specific adhesive as applied;

n = The number of different adhesives as applied each day by each miscellaneous industrial adhesive application operation;

V_i = The volume of each adhesive, as applied, in units of l (gal);

VOM_i = The VOM content in units of kg (lbs) VOM per volume in l (gal) of each adhesive as applied;

2) Allowable Weighted Average VOM Limit for an Averaging Operation

$$Limit_{WA} = \frac{\sum_{i=1}^{n} V_i Limit_i}{\sum_{i=1}^{n} V_i}$$

where:

$Limit_{WA}$ = The allowable weighted average VOM limit in units of kg (lbs) VOM per volume in l (gal) of all subject adhesives as applied each day in a single operation;

i = Subscript denoting a specific adhesive as applied;

n = The number of different adhesives as applied each day by each miscellaneous industrial adhesive application operation;

V_i = The volume of each adhesive, as applied, in units of l (gal);

$Limit_i$ = The VOM limit, taken from subsection (b) of this Section, in units of kg (lbs) VOM per volume in l (gal) of each adhesive as applied.

d) No owner or operator of a source subject to this Subpart shall operate a miscellaneous industrial adhesive application operation employing a capture system and control device unless either:

1) An afterburner or carbon adsorption system is used that provides at least 85 percent reduction in the overall emissions of VOM from the application operation;

2) An alternative capture and control system is used that provides at least 85 percent reduction in the overall emissions of VOM from the application operation and is approved by the Agency and approved by USEPA as a SIP revision. The owner or operator shall submit a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for the control device; or

3) The owner or operator complies with the applicable limitation set forth in subsection (b) of this Section by utilizing a combination of low-VOM adhesives and an afterburner or carbon adsorption system. The owner or operator may use an alternative capture and control system if the owner or operator submits a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for the capture and control system and the system is approved by the Agency and approved by USEPA as a SIP revision.

e) The owner or operator of a source subject to this Subpart shall apply all miscellaneous industrial adhesives using one or more of the following methods:

1) Electrostatic spray;

2) High volume low pressure (HVLP) spray;

3) Flow coating. For the purposes of this Subpart, flow coating means a non-atomized technique of applying coating to a substrate with a fluid nozzle with no air supplied to the nozzle;

4) Roll coating or hand application, including non-spray application methods similar to hand or mechanically powered caulking gun, brush, or direct hand application;

5) Dip coating, including electrodeposition. For purposes of this Subpart, "electrodeposition" means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created;

6) Airless spray;

7) Air-assisted airless spray; or

8) Another adhesive application method capable of achieving a transfer efficiency equal to or better than that achieved by HVLP spraying, if the method is approved in writing by the Agency.

f) The owner or operator of a source subject to this Subpart shall comply with the following work practices for each subject miscellaneous adhesive application operation at the source:

1) Store all VOM-containing adhesives, adhesive primers, process-related waste materials, cleaning materials, and used shop towels in closed containers;

2) Ensure that mixing and storage containers used for VOM-containing adhesives, adhesive primers, process-related waste materials, and cleaning materials are kept closed at all times except when depositing or removing those materials;

3) Minimize spills of VOM-containing adhesives, adhesive primers, process-related waste materials, and cleaning materials;

4) Convey VOM-containing adhesives, adhesive primers, process-related waste materials, and cleaning materials from one location to another in closed containers or pipes; and

5) Minimize VOM emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.902 Testing Requirements

a) Testing to demonstrate compliance with the requirements of this Subpart shall be conducted by the owner or operator by May 1, 2012. Thereafter, testing shall be conducted within 90 days after a request by the Agency, or as otherwise provided in this Subpart. The testing shall be conducted at the expense of the owner or operator and the owner or operator shall notify the Agency in writing 30 days in advance of conducting the testing to allow the Agency to be present during testing.

b) Testing to demonstrate compliance with the VOM content limitations in Section 219.901(b) of this Subpart shall be conducted as follows:

1) Method 24, incorporated by reference in Section 219.112 of this Part, shall be used for non-reactive adhesives. If it is demonstrated to the satisfaction of the Agency and the USEPA that plant adhesive formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern;

2) Appendix A of 40 CFR 63, Subpart PPPP, incorporated by reference in Section 219.112 of this Part, shall be used for reactive adhesives;

3) The manufacturer's specifications for VOM content for adhesives may be

used if the specifications are based on results of tests of the VOM content conducted in accordance with methods specified in subsections (b)(1) and (b)(2) of this Section, as applicable.

c) For afterburners and carbon adsorbers, the methods and procedures of Section 219.105(d) through (f) of this Part shall be used for testing to demonstrate compliance with the requirements of Section 219.901(d) of this Subpart, as follows:

1) To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part;

2) To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part;

3) To determine the VOM concentration of the exhaust stream entering and exiting the emissions control system, Method 25 or 25A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part. For thermal and catalytic afterburners, Method 25 must be used, except under the following circumstances, in which case Method 25A must be used:

A) The allowable outlet concentration of VOM from the emissions control system is less than 50 ppmv, as carbon;

B) The VOM concentration at the inlet of the emissions control system and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon;

C) Due to the high efficiency of the emissions control system, the anticipated VOM concentration at the emissions control system exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest shall be conducted using either Method 25 or Method 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest using Method 25;

D) During testing, the cleaning equipment shall be operated at representative operating conditions and flow rates.

d) An owner or operator using an emissions control system other than an afterburner or carbon adsorber shall conduct testing to demonstrate compliance with the requirements of Section 219.901(d) as set forth in the owner's or operator's plan approved by the Agency and USEPA pursuant to Section 219.901(d)(3).

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.903 Monitoring Requirements

a) If an afterburner is used to demonstrate compliance, the owner or operator of a source subject to Section 219.901(d) of this Subpart shall:

1) Install, calibrate, operate, and maintain temperature monitoring devices with an accuracy of 3°C or 5°F on the emissions control system in accordance with Section 219.105(d)(2) of this Part and in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the emissions control system is operating; and

2) Install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring devices, such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor.

b) If a carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to Section 219.901(d) of this Subpart shall use Agency and USEPA approved continuous monitoring equipment that is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use. The continuous monitoring equipment shall monitor the VOM concentration of each carbon adsorption bed exhaust or the exhaust of the bed next in sequence to be desorbed.

c) If an emissions control system other than an afterburner or carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to Section 219.901(d) of this Subpart shall install, maintain, calibrate, and operate the monitoring equipment as set forth in the owner's or operator's plan approved by the Agency and USEPA pursuant to Section 219.901(d)(3).

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

Section 219.904 Recordkeeping and Reporting Requirements

a) The owner or operator of a source exempt from the limitations of this Subpart because of the criteria in Section 219.900(a) of this Subpart shall comply with the following:

1) By May 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

A) A declaration that the source is exempt from the requirements of this Section because of the criteria in Section 219.900(a);

B) Calculations that demonstrate that combined emissions of VOM from miscellaneous industrial adhesive application operations at the source, including related cleaning activities, never equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment. To calculate daily emissions of VOM, the owner or operator shall determine the monthly emissions of VOM from miscellaneous industrial adhesive application operations at the source (including related cleaning activities) and divide this amount by the number of days during that calendar month that miscellaneous industrial adhesive application operations at the source were in operation;

2) Collect and record the following information each month for each miscellaneous industrial adhesive application operation, maintain the information at the source for a period of three years, and provide the information to the Agency upon request:

A) The name and identification number of each adhesive as applied by each miscellaneous industrial adhesive application operation; and

B) The weight of VOM per volume and the volume of each adhesive (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each month by each miscellaneous industrial adhesive application operation;

3) Notify the Agency of any record that shows that the combined emissions of VOM from miscellaneous industrial adhesive application operations at the source, including related cleaning activities, ever equal or exceed 6.8 kg/day (15 lbs/day), in the absence of air pollution control equipment, within 30 days after the event occurs, and provide copies of those records upon request by the Agency.

b) All sources subject to the requirements of this Subpart shall:

1) By May 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

A) Identification of each subject adhesive application operation as of the date of certification;

B) A declaration that all subject adhesive application operations are in compliance with the requirements of this Subpart;

C) The limitation with which each subject adhesive application operation will comply (i.e., the VOM content limitation, the daily weighted averaging alternative, or the emissions control system alternative);

D) Initial documentation that each subject adhesive application operation will comply with the applicable limitation, including copies of manufacturer's specifications, test results (if any), formulation data, and calculations;

E) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;

F) A description of the practices and procedures that the source will follow to ensure compliance with the limitations in Section 219.901(f) of this Subpart;

G) A description of each adhesive application operation exempt pursuant to Section 219.900(b)(2) of this Subpart, if any; and

H) The application methods used by each subject adhesive application operation;

2) At least 30 calendar days before changing the method of compliance in accordance with Section 219.901(b), (c), and (d), notify the Agency in writing of the change. The notification shall include a demonstration of compliance with the newly applicable subsection;

3) Notify the Agency in writing of any violation of the requirements of this Subpart within 30 days following the occurrence of the violation and provide records documenting the violation upon request by the Agency;

4) Retain all records required by this Section for at least three years and make those records available to the Agency upon request.

c) The owner or operator of an adhesive application operation subject to the limitations of Section 219.901 of this Subpart and complying by means of Section 219.901(b) shall comply with the following:

1) By May 1, 2012, or upon the initial start-up date, whichever is later, submit a certification to the Agency that includes the name, identification number, and VOM content of each adhesive as applied by each subject adhesive application operation;

2) Collect and record the name, identification number, and VOM content of each adhesive as applied each day by each adhesive application operation complying with Section 219.901(b).

d) The owner or operator of an adhesive application operation subject to the limitations of Section 219.901 of this Subpart and complying by means of Section 219.901(c) shall comply with the following:

1) By May 1, 2012, or upon initial start-up, whichever is later, submit a certification to the Agency that includes the name, identification number, and VOM content of each adhesive as applied by each subject adhesive application operation;

2) Collect and record the following information each day for each adhesive application operation complying by means of Section 219.901(c):

A) The name, identification number, VOM content, and volume of each adhesive as applied each day by each subject adhesive application operation;

B) The daily weighted average VOM content of all adhesives as applied by each subject adhesive application operation.

e) The owner or operator of an adhesive application operation subject to the requirements of Section 219.901 of this Subpart and complying by means of Section 219.901(d) shall:

1) By May 1, 2012, or upon the initial start-up date, whichever is later, and upon initial start-up of a new control device, submit a certification to the Agency that includes the following:

A) The type of afterburner or other approved control device used to comply with the requirements of Section 219.901(d);

B) The results of all tests and calculations necessary to demonstrate compliance with the control requirements of Section 219.901(d); and

C) A declaration that the monitoring equipment required under Section 219.903 of this Subpart has been properly installed and calibrated according to manufacturer's specifications;

2) Within 90 days after conducting testing pursuant to Section 219.902 of this Subpart, submit to the Agency a copy of all test results, as well as a certification that includes the following:

A) A declaration that all tests and calculations necessary to demonstrate whether the adhesive application operations are in compliance with Section 219.901(d) have been properly performed;

B) A statement whether the adhesive application operations are or are not in compliance with Section 219.901(d); and

C) The operating parameters of the afterburner or other approved control device during testing, as monitored in accordance with Section 219.903 of this Subpart;

3) Collect and record daily the following information for each adhesive application operation subject to the requirements of Section 219.901(d):

A) Afterburner or other approved control device monitoring data in accordance with Section 219.903 of this Subpart;

B) A log of operating time for the afterburner or other approved control device, monitoring equipment, and the associated application unit; and

C) A maintenance log for the afterburner or other approved control device and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages.

(Source: Amended at 35 Ill. Reg. 13676, effective July 27, 2011)

SUBPART PP: MISCELLANEOUS FABRICATED PRODUCT MANUFACTURING PROCESSES

Section 219.920 Applicability

a) The requirements of this Subpart shall apply to a source's miscellaneous fabricated product manufacturing process emission units which are not included within any of the categories specified in Subparts B, E, F, H, Q, R, S, T, V, X, Y, Z or BB if the source is subject to this Subpart. A source is subject to this Subpart if it contains process emission units, not regulated by Subparts B, E, F (excluding Section 219.204(1) of this Part), H (excluding Section 219.405 of this Part), Q, R, S, T, (excluding Section 219.486 of this Part), V, X, Y, Z or BB of this Part; which as a group both:

1) Have maximum theoretical emissions of 91 Mg (100 tons) or more per calendar year of VOM if no air pollution control equipment were used, and

2) Are not limited to less than 91 Mg (100 tons) of VOM emissions per calendar year in the absence of air pollution control equipment, through production or capacity limitations contained in a federally enforceable permit or a SIP revision.

b) If a source ceases to fulfill the criteria of subsection (a) above, the requirements of this Subpart shall continue to apply to a miscellaneous fabricated products manufacturing process emission unit which was ever subject to the control requirements of Section 219.926 of this Part.

c) No limits under this Subpart shall apply to emission units with emissions of VOM to the atmosphere less than or equal to 0.91 Mg (1.0 ton) per calendar year if the total emissions from such emission units not complying with Section 219.926 of this Part does not exceed 4.5/Mg (5.0 tons) per calendar year.

d) For the purposes of this Subpart, an emission unit shall be considered regulated by a Subpart if it is subject to the limits of that Subpart. An emission unit is not considered regulated by a Subpart if it is not subject to the limits of that Subpart, e.g., the emission unit is covered by an exemption in the Subpart or the applicability criteria of the Subpart are not met.

e) For the purposes of this Subpart, uncontrolled VOM emissions are the emissions of VOM which would result if no air pollution control equipment were used.

f) The control requirements in Subpart PP shall not apply to sewage treatment plants; vegetable oil extraction and processing; coke ovens (including by-product recovery plants); fuel combustion units; bakeries; barge loading facilities; jet engine test cells; production of polystyrene foam insulation board including storage and extrusion of scrap where blowing agent is added to the polystyrene resin at the source, but not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene resin by the producer of the resin; production of polystyrene foam packaging not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene resin by the producer of the resin and not including storage and extrusion of scrap where blowing agent is added to the polystrene resin at the source; and iron and steel production.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.923 Permit Conditions

No person shall violate any condition in a permit when the condition results in exclusion of the source or an emission unit from this Subpart.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.926 Control Requirements

Every owner or operator of miscellaneous fabricated product manufacturing process emission unit subject to this Subpart shall comply with the requirements of subsection (a), (b) or (c) of this Section:

a) Emission capture and control techniques which achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit, or (Board Note: For the purpose of this provision, an emission unit is any part or activity at a source of a type that by itself is subject to control requirements in other Subparts of this Part or 40 CFR 60, incorporated by reference in Section

219.112, e.g., a coating line, a printing line, a process unit, a wastewater system, or other equipment, or is otherwise any part or activity at a source.)

b) For coating lines, the daily-weighted average VOM content shall not exceed 0.42 kg VOM/1 (3.5 lbs VOM/gal) of coating as applied (minus water and any compounds which are specifically exempted from the definition of VOM) during any day. Owners and operators complying with this Section are not required to comply with Section 219.301 of this Part, or

c) An equivalent alternative control plan which has been approved by the Agency and the USEPA in a federally enforceable permit or as a SIP revision.

(Source: Amended at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.927 Compliance Schedule

Every owner or operator of an emission unit subject to the control requirements of this Subpart shall comply with the requirements thereof on and after a date consistent with Section 219.106 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.928 Testing

a) When in the opinion of the Agency it is necessary to conduct testing to demonstrate compliance with Section 219.926 of this Part, the owner or operator of a VOM emission unit subject to the requirements of this Subpart shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 219.105 of this Part.

b) Nothing in this Section shall limit the authority of the USEPA pursuant to the Clean Air Act, as amended, to require testing.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART QQ: MISCELLANEOUS FORMULATION MANUFACTURING PROCESSES

Section 219.940 Applicability

a) The requirements of this Subpart shall apply to a source's miscellaneous formulation manufacturing process emission units, which are not included within any of the categories specified in Subparts B, E, F, H, Q, R, S, T, V, X, Y, Z or BB of this Part if the source is subject to this Subpart. A source is subject to this Subpart if it contains process emission units, not regulated by Subparts B, E, F (excluding Section 219.204(1) of this Part), H (excluding Section 219.405 of this Part), Q, R, S, T (excluding Section 219.486 of this Part), V, X, Y, Z or BB of this Part; which as a group both:

1) Have maximum theoretical emissions of 91 Mg (100 tons) or more per calendar year of VOM if no air pollution control equipment were used, and

2) Are not limited to less than 91 Mg (100 tons) of VOM emissions per calendar year in the absence of air pollution control equipment, through production or capacity limitations contained in a federally enforceable permit or a SIP revision.

b) If a source ceases to fulfill the criteria of subsection (a) of this Section, the requirements of this Subpart shall continue to apply to a miscellaneous formulation manufacturing process emission unit which was ever subject to the control requirements of Section 219.946 of this Part.

c) No limits under this Subpart shall apply to emission units with emissions of VOM to the atmosphere less than or equal to 2.3 Mg (2.5 tons) per calendar year if the total emissions from such emission units not complying with this Section does not exceed 4.5 Mg (5.0 tons) per calendar year.

d) For the purposes of this Subpart, an emission unit shall be considered regulated by a Subpart if it is subject to the limits of that Subpart. An emission unit is not considered regulated by a Subpart if it is not subject to the limits of that Subpart, e.g., the emission unit is covered by an exemption in the Subpart or the applicability criteria of the Subpart are not met.

e) For the purposes of this Subpart, uncontrolled VOM emissions are the emissions of VOM which would result if no air pollution control equipment were used.

f) The control requirements in Subpart QQ shall not apply to sewage treatment plants; vegetable oil extraction and processing; coke ovens (including by-product recovery plants); fuel combustion units; bakeries; barge loading facilities; jet engine test cells; production of polystyrene foam insulation board including storage and extrusion of scrap where blowing agent is added to the polystyrene resin at the source, but not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene resin by the producer of the resin; production of polystyrene foam packaging not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene resin by the producer of the resin and not including storage and extrusion of scrap where blowing agent is added to the polystyrene resin at the source; and iron and steel production.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.943 Permit Conditions

No person shall violate any condition in a permit when the condition results in exclusion of the source or an emission unit from this Subpart.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.946 Control Requirements

Every owner or operator of a miscellaneous formulation manufacturing process emission unit subject to this Subpart shall comply with the requirements of subsection (a) or (b) of this Section.

a) Emission capture and control techniques which achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit, or (Board Note: For the purpose of this provision, an emission unit is any part or activity at a source of a type that by itself is subject to control requirements in other Subparts of this Part or 40 CFR 60, incorporated by reference in Section 219.112, e.g., a coating line, a printing line, a process unit, a wastewater system, or other equipment, or is otherwise any part or activity at a source.)

b) An equivalent alternative control plan which has been approved by the Agency and the USEPA in a federally enforceable permit or as a SIP revision.

(Source: Amended at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.947 Compliance Schedule

Every owner or operator of an emission unit subject to the control requirements of this Subpart shall comply with the requirements thereof on and after a date consistent with Section 219.106 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.948 Testing

a) When in the opinion of the Agency it is necessary to conduct testing to demonstrate compliance with Section 219.946 of this Part, the owner or operator of a VOM emission unit subject to the requirements of this Subpart shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 219.105 of this Part.

b) Nothing in this Section shall limit the authority of the USEPA pursuant to the Clean Air Act, as amended, to require testing.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART RR: MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING PROCESSES

Section 219.960 Applicability

a) The requirements of this Subpart shall apply to a source's miscellaneous organic chemical manufacturing process emission units which are not included within any of the categories specified in Subparts B, E, F, H, Q, R, S, T, V, X, Y, Z or BB of this Part, if the source is subject to this Subpart. A source is subject to this Subpart if it contains process emission units, not regulated by Subparts B, E, F (excluding Section 219.204(l) of this Part), H (excluding Section 219.405 of this Part), Q, R, S, T (excluding Section 219.486 of this Part) V, X, Y, Z or BB of this Part; which as a group both:

1) Have maximum theoretical emissions of 91 Mg (100 tons) or more per calendar year of VOM if no air pollution control equipment were used, and

2) Are not limited to less than 91 Mg (100 tons) of VOM emissions per calendar year in the absence of air pollution control equipment, through production or capacity limitations contained in a federally enforceable permit or a SIP revision.

b) If a source ceases to fulfill the criteria of Subsection (a) of this Section, the requirements of this Subpart shall continue to apply to a miscellaneous organic chemical manufacturing process emission unit which was ever subject to the control requirements of Section 219.966 of this Part.

c) No limits under this Subpart shall apply to emission units with emissions of VOM to the atmosphere less than or equal to 0.91 Mg (1.0 ton) per calendar year if the total emissions from such emission units not complying with Section 219.966 of this Part does not exceed 4.5 Mg (5.0 tons) per calendar year.

d) For the purposes of this Subpart, an emission unit shall be considered regulated by a Subpart if it is subject to the limits of that Subpart. An emission unit is not considered regulated by a Subpart if it is not subject to the limits of that Subpart, e.g., the emission unit is covered by an exemption in the Subpart or the applicability criteria of the Subpart are not met.

e) For the purposes of this Subpart, uncontrolled VOM emissions are the emissions of VOM which would result if no air pollution control equipment were used.

f) The control requirements in Subpart RR shall not apply to sewage treatment plants; vegetable oil extraction and processing; coke ovens (including by-product recovery plants); fuel combustion units; bakeries; barge loading facilities; jet engine test cells; production of polystyrene foam insulation board including storage and extrusion of scrap where blowing agent is added to the polystyrene resin at the source, but not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene resin by the producer of the resin; production of polystyrene foam packaging not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene resin by the producer of the resin and not including storage and extrusion of scrap where blowing agent is added to the polystyrene resin at the source; and iron and steel production.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.963 Permit Conditions

No person shall violate any condition in a permit when the condition results in exclusion of the source or an emission unit from this Subpart.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.966 Control Requirements

Every owner or operator of a miscellaneous organic chemical manufacturing process emission unit, subject to this Subpart shall comply with the requirements of subsection (a), (b), or (c) of this Section.

a) Emission capture and control techniques which achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit, or (Board Note: For the purpose of this provision, an emission unit is any part or activity at a source of a type that by itself is subject to control requirements in other Subparts of this Part or 40 CFR 60, incorporated by reference in Section 219.112, e.g., a coating line, a printing line, a process unit, a wastewater system, or other equipment, or is otherwise any part or activity at a source.)

b) An equivalent alternative control plan which has been approved by the Agency and the USEPA in federally enforceable permit or as a SIP revision.

c) Any leaks from components subject to the control requirements of this Subpart shall be subject to the following control measures by March 15, 1995:

 1) Repair any component from which a leak of VOL can be observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found, unless the leaking component cannot be repaired until the next process unit shutdown, in which case the leaking component must be repaired before the unit is restarted.

 2) For any leak which cannot be readily repaired within one hour after detection, the following records, as set forth in this subsection, shall be kept. These records shall be maintained by the owner or operator for a minimum of two years after the date on which they are made. Copies of the records shall be made available to the Agency or USEPA upon verbal or written request.

  A) The name and identification of the leaking component;

  B) The date and time the leak is detected;

  C) The action taken to repair the leak; and

  D) The date and time the leak is repaired.

(Source: Amended at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.967 Compliance Schedule

Every owner or operator of an emission unit subject to the control requirements of this Subpart shall comply with the requirements of this Subpart on and after a date consistent with Section 219.106 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.968 Testing

a) When in the opinion of the Agency it is necessary to conduct testing to demonstrate compliance with Section 219.966 of this Part, the owner or operator of a VOM emission unit subject to the requirements of this Subpart shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 219.105 of this Part.

b) Nothing in this Section shall limit the authority of the USEPA pursuant to the Clean Air Act, as amended, to require testing.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART TT: OTHER EMISSION UNITS

Section 219.980 Applicability

a) The requirements of this Subpart shall apply to a source's VOM emission units, which are not included within any of the categories specified in Subparts B, E, F, H, Q, R, S, T, V, X, Y, Z, AA, BB, PP, QQ, or RR of this Part, or are not exempted from permitting requirements pursuant to 35 Ill. Adm. Code 201.146, if the source is subject to this Subpart. A source is subject to this Subpart if it contains process emission units, not regulated by Subparts B, E, F (excluding Section 219.204(l) of this Part), H (excluding Section 219.405 of this Part), Q, R, S, T, (excluding Section 218.486 of this Part), V, X, Y, Z or BB of this Part, which as a group both:

  1) Have maximum theoretical emissions of 91 Mg (100 tons) or more per calendar year of VOM if no air pollution control equipment were used, and

  2) Are not limited to less than 91 Mg (100 tons) of VOM emissions per calendar year in the absence of air pollution control equipment, through production or capacity limitations contained in a federally enforceable permit or a SIP revision.

b) If a source ceases to fulfill the criteria of subsection (a) of this Section, the requirements of this Subpart shall continue to apply to an emission unit which was ever subject to the control requirements of Section 219.986 of this Part.

c) No limits under this Subpart shall apply to emission units with emissions of VOM to the atmosphere less than or equal to 2.3 Mg (2.5 tons) per calendar year if the total emissions from such emission unit not complying with Section 219.986 of this Part does not exceed 4.5 Mg (5.0 tons) per calendar year.

d) For the purposes of this Subpart, an emission unit shall be considered regulated by a Subpart if it is subject to the limits of that Subpart. An emission unit is not considered regulated by a Subpart if it is not subject to the limits of that Subpart, e.g., the emission unit is covered by an exemption in the Subpart or the applicability criteria of the Subpart are not met.

e) The control requirements in Subpart TT shall not apply to sewage treatment plants; vegetable oil extraction and processing; coke ovens (including by-product recovery); fuel combustion units; bakeries; barge loading facilities; jet engine test cells; production of polystyrene foam insulation board including storage and extrusion of scrap where blowing agent is added to the polystyrene resin at the source, but not including blending and preliminary expansion of resin prior to molding where a blowing agent is incorporated into the polystyrene resin by the producer of the resin; production of polystyrene or polyethylene foam packaging not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene resin by the producer of the resin; and not including storage and extrusion of scrap where blowing agent is added to the polystyrene resin at the source; and iron and steel production.

(Source: Amended at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.983 Permit Conditions

No person shall violate any condition in a permit when the condition results in exclusion of the source or an emission unit from this Subpart.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.986 Control Requirements

Every owner or operator of an emission unit subject to this Subpart shall comply with the requirements of subsection (a), (b), (c), (d) or (e) of this Section.

a) Emission capture and control equipment which achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit, or

(Board Note: For the purpose of this provision, an emission unit is any part or activity at a source of a type that by itself is subject to control requirements in other Subparts of this Part or 40 CFR 60, incorporated by reference in Section 219.112, e.g., a coating line, a printing line, a process unit, a wastewater system, or other equipment, or is otherwise any part or activity at a source.)

b) For coating lines, the daily-weighted average VOM content shall not exceed 0.42

kg VOM/1 (3.5 lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied during any day. Owners and operators complying with this Section are not required to comply with Section 219.301 of this Part, or

c) An equivalent alternative control plan which has been approved by the Agency and the USEPA in a federally enforceable permit or as a SIP revision.

d) Non-contact process water cooling towers which are subject to the control requirements of this Subpart shall comply with the following control measures no later than March 15, 1995 or upon initial startup:

1) The owner or operator of a non-contact process water cooling tower shall perform the following actions to control emissions of volatile organic material (VOM) from such a tower:

A) Inspect and monitor such tower to identify leaks of VOM into the water, as further specified in subsection (d)(3) of this Section;

B) When a leak is identified, initiate and carry out steps to identify the specific leaking component or components as soon as practicable, as further specified in subsection (d)(4) of this Section;

C) When a leaking component is identified which:

i) Can be removed from service without disrupting production, remove the component from service;

ii) Cannot be removed from service without disrupting production, undertake repair of the component at the next reasonable opportunity to do so including any period when the component is out of service for scheduled maintenance, as further specified in subsection (d)(4) of this Section;

D) Maintain records of inspection and monitoring activities, identification of leaks and leaking components, elimination and repair of leaks, and operation of equipment as related to these activities, as further specified in subsection (d)(5) of this Section.

2) A VOM leak shall be considered to exist in a non-contact process water cooling water system if the VOM emissions or VOM content exceed background levels as determined by monitoring conducted in accordance with subsection (d)(3)(A) of this Section.

3) The owner or operator of an non-contact process water cooling tower shall carry out an inspection and monitoring program to identify VOM leaks in the cooling water system.

A) The owner or operator of a non-contact process water cooling tower shall submit to the Agency a proposed monitoring program, accompanied by technical justification for the program, including justification for the program, including justification for the sampling location(s), parameter(s) selected for measurement, monitoring and inspection frequency, and the criteria used relative to the monitored parameters to determine whether a leak exists as specified in subsection (d)(2) of this Section.

B) This inspection and monitoring program for non-contact process water cooling towers shall include, but shall not be limited to:

i) Monitoring of each such tower with a water flow rate of 25,000 gallons per minute or more at a petroleum refinery at least weekly and monitoring of other towers at least monthly;

ii) Inspection of each such tower at least weekly if monitoring is not performed at least weekly.

C) This inspection and monitoring program shall be carried out in accordance with written procedures which the Agency shall specify as a condition in a federally enforceable operating permit. These procedures shall include the VOM background levels for the cooling tower as established by the owner or operator through monitoring; describe the locations at which samples will be taken; identify the parameter(s) to be measured, the frequency of measurements, and the procedures for monitoring each such tower, that is, taking of samples and other subsequent handling and analyzing of samples; provide the criteria used to determine that a leak exists as specified in subsection (d)(2) of this Section; and describe the records which will be maintained.

D) A non-contact process water cooling tower is exempt from the requirements of subsections (d)(3)(B) and (d)(3)(C) of this Section, if all equipment, where leaks of VOM into cooling water may occur, is operated at a minimum pressure in the cooling water of at least 35 kPa greater than the maximum pressure in the process fluid.

4) The repair of a leak in a non-contact process water cooling tower shall be considered to be completed in an acceptable manner as follows:

A) Efforts to identify and locate the leaking components are initiated as soon as practicable, but in no event later than three days after detection of the leak in the cooling water tower;

B) Leaking components shall be repaired or removed from service as soon as possible but no later than 30 days after the leak in the cooling water tower is detected, unless the leaking components cannot be repaired until the next scheduled shutdown for maintenance.

5) The owner or operator of a non-contact process water cooling tower shall keep records as set forth below in this subsection. These records shall be retained at a readily accessible location at the source and shall be available for inspection and copying by the Agency for at least 3 years:

A) Records of inspection and monitoring activity;

B) Records of each leak identified in such tower, with date, time and nature of observation or measured level of parameter;

C) Records of activity to identify leaking components, with date initiated, summary of components inspected with dates, and method of inspection and observations;

D) Records of activity to remove a leaking component from service or repair a leaking component, with date initiated and completed, description of actions taken and the basis for determining the leak in such tower has been eliminated. If the leaking component is not identified, repaired or eliminated within 30 days of initial identification of a leak in such tower, this report shall include specific reasons why the leak could not be eliminated sooner including all other intervening periods when the process unit was out of service, actions taken to minimize VOM losses prior to elimination of the leak and any actions taken to prevent the recurrence of a leak of this type.

6) The owner or operator of a non-contact process water cooling tower shall submit an annual report to the Agency which provides:

A) The number of leaks identified in each cooling tower;

B) A general description of activity to repair or eliminate leaks which were identified;

C) Identification of each leak which was not repaired in 30 days from the date of identification of a leak in such a tower, with description of the leaks, explanation why the leak was not repaired in 30 days;

D) Identification of any periods when required inspection and monitoring activities were not carried out.

e) Any leaks from components subject to the control requirements of this Subpart shall be subject to the following control measures by March 15, 1995:

1) Repair any component from which a leak of VOL can be observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found, unless the leaking component cannot be repaired until the next process unit shutdown, in which case the leaking component must be repaired before the unit is restarted.

2) For any leak which cannot be readily repaired within one hour after detection, the following records, as set forth below in this subsection, shall be kept. These records shall be maintained by the owner or operator for a minimum of two years after the date on which they are made. Copies of the records shall be made available to the Agency or USEPA upon verbal or written request.

   A) The name and identification of the leaking component;

   B) The date and time the leak is detected;

   C) The action taken to repair the leak; and

   D) The date and time the leak is repaired.

(Source: Amended at 19 Ill. Reg. 6958, effective May 9, 1995)

Section 219.987 Compliance Schedule

Every owner or operator of an emissions unit which is subject to this Subpart shall comply with the requirements of this Subpart on and after a date consistent with Section 219.106 of this Part.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.988 Testing

a) When in the opinion of the Agency it is necessary to conduct testing to demonstrate compliance with Section 219.986 of this Part, the owner or operator of a VOM emission unit subject to the requirements of this Subpart shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 219.105.

b) Nothing in this Section shall limit the authority of the USEPA pursuant to the Clean Air Act, as amended, to require testing.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

SUBPART UU: RECORDKEEPING AND REPORTING

Section 219.990 Exempt Emission Units

Upon request by the Agency, the owner or operator of an emission unit which is exempt from the requirements of Subparts PP, QQ, RR, TT or Section 219.208(b) of this Part shall submit records to the Agency within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.991 Subject Emission Units

a) Any owner or operator of a VOM emission unit which is subject to the requirements of Subpart PP, QQ, RR or TT and complying by the use of emission capture and control equipment shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new emission unit, the owner or operator of the subject VOM emission unit shall demonstrate to the Agency that the subject emission unit will be in compliance on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date by submitting to the Agency all calculations and other supporting data, including descriptions and results of any tests the owner or operator may have performed.

2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject VOM source shall collect and record all of the following information each day and maintain the information at the source for a period of three years:

A) Control device monitoring data.

B) A log of operating time for the capture system, control device, monitoring equipment and the associated emission source.

C) 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.

3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject VOM source shall notify the Agency in the following instances:

A) Any record showing a violation of the requirements of Subpart PP, QQ, RR or TT shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance with Subpart PP or TT from the use of capture systems and control devices to the use of complying coatings, the owner or operator shall comply with all requirements of subsection (b)(1) of this Section. Upon changing the method of compliance with Subpart PP or TT from the use of capture systems and control devices to the use of complying coatings, the owner or operator shall comply with all requirements of subsection (b) of this Section.

4) Testing

A) When in the opinion of the Agency it is necessary to conduct testing to demonstrate compliance with this Subpart, the owner or operator of a VOM emission source subject to the requirements of this Subpart shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 219.105 of this Part.

B) Nothing in this Section shall limit the authority of the USEPA pursuant to the Clean Air Act, as amended, to require testing.

b) Any owner or operator of a coating line which is subject to the requirements of Subpart PP or TT and complying by means of the daily-weighted average VOM content limitation shall comply with the following:

1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a coating line subject to Subpart PP or TT, the owner or operator of the subject coating line shall certify to the Agency that the coating line will be in compliance on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date. Such certification shall include:

A) The name and identification number of each coating line which will comply by means of the daily-weighted average VOM content limitation.

B) The name and identification number of each coating as applied on each coating line.

C) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.

D) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each coating line.

E) The method by which the owner or operator will create and maintain records each day as required in subsection (b)(2).

F) An example of the format in which the records required in subsection (b)(2) of this Section will be kept.

2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating as applied on each coating line.

B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.

C) The daily-weighted average VOM content of all coatings as applied on each coating line as defined in Section 219.104 of this Part.

3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:

A) Any record showing violation of the requirements of Subpart PP or TT shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance with Subpart PP or TT from the use of complying coatings to the use capture systems and control devices, the owner or operator shall comply with all requirements of subsection (a)(1) of this Section. Upon changing the method of compliance with Subpart PP or TT from the use of complying coatings to the use capture systems and control devices, the owner or operator shall comply with all requirements of subsection (a) of this Section.

c) Any owner or operator of a VOM emission source which is subject to the requirements of Subpart PP, QQ, RR or TT and complying by means of an alternative control plan which has been approved by the Agency and approved by the USEPA as a SIP revision shall comply with the recordkeeping and reporting requirements specified in the alternative control plan.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.Appendix A List of Chemicals Defining Synthetic Organic Chemical and Polymer Manufacturing

CAS No.[a]	Chemical
105-57-7	Acetal
75-07-0	Acetaldehyde
107-89-1	Acetaldol
60-35-5	Acetamide
103-84-4	Acetanilide
64-19-7	Acetic acid
108-24-7	Acetic anhydride
67-64-1	Acetone
75-86-5	Acetone cyanohydrin
75-05-8	Acetonitrile
98-86-2	Acetophenone
75-36-5	Acetyl chloride
74-86-2	Acetylene
107-02-8	Acrolein
79-06-1	Acrylamide
79-10-7	Acrylic acid & esters
107-13-1	Acrylonitrile
124-04-9	Adipic acid
111-69-3	Adiponitrile
(b)	Alkyl naphthalenes
107-18-6	Allyl alcohol
107-05-1	Allyl chloride
1321-11-5	Aminobenzoic acid
111-41-1	Aminoethylethanolamine
123-30-8	p-aminophenol
628-63-7, 123-92-2	Amyl acetates
71-47-0[c]	Amyl alcohols
110-58-7	Amyl amine
543-59-9	Amyl chloride
110-68-7[c]	Amyl mercaptans
1322-06-1	Amyl phenol
62-53-3	Aniline
142-04-1	Aniline hydrochloride
29191-52-4	Anisidine
100-66-3	Anisole
118-92-3	Anthranilic acid
84-65-1	Anthraquinone
100-52-7	Benzaldehyde
55-21-0	Benzamide
71-43-2	Benzene
98-48-6	Benzenedisulfonic acid
98-11-3	Benzenesulfonic acid

134-81-6	Benzil
76-93-7	Benzilic acid
65-85-0	Benzoic acid
119-53-9	Benzoin
100-47-0	Benzonitrile
119-61-9	Benzophenone
98-07-7	Benzotrichloride
98-88-4	Benzoyl chloride
100-51-6	Benzyl alcohol
100-46-9	Benzylamine
120-51-4	Benzyl benzoate
100-44-7	Benzyl chloride
98-87-3	Benzyl dichloride
92-52-4	Biphenyl
80-05-7	Bisphenol A
10-86-1	Bromobenzene
27497-51-4	Bromonaphthalene
106-99-0	Butadiene
106-98-9	l-butene
123-86-4	n-butyl acetate
141-32-2	n-butyl acrylate
71-36-3	n-butyl alcohol
78-92-2	s-butyl alcohol
75-65-0	t-butyl alcohol
109-73-9	n-butylamine
13952-84-6	s-butylamine
75-64-9	t-butylamine
98-73-7	p-tert-butyl benzoic acid
107-88-0	1,3-butylene glycol
123-72-8	n-butyraldehyde
107-92-6	Butyric acid
106-31-0	Butyric anhydride
109-74-0	Butyronitrile
105-60-2	Caprolactam
75-1-50	Carbon disulfide
558-13-4	Carbon tetrabromide
55-23-5	Carbon tetrachloride
9004-35-7	Cellulose acetate
79-11-8	Chloroacetic acid
108-42-9	m-chloroaniline
95-51-2	o-chloroaniline
106-47-8	p-chloroaniline
35913-09-8	Chlorobenzaldehyde
108-90-7	Chlorobenzene
118-91-2, 535-80-8, 74-11-3[c]	Chlorobenzoic acid
2136-81-4,	Chlorobenzotrichloride

2136-89-2, 5216-25-1[c]	
1321-03-5	Chlorobenzoyl chloride
75-45-6	Chlorodifluoroethane
25497-29-4	Chlorodifluoromethane
67-66-3	Chloroform
25586-43-0	Chloronaphthalene
88-73-3	o-chloronitrobenzene
100-00-5	p-chloronitrobenzene
25167-80-0	Chlorophenols
126-99-8	Chloroprene
7790-94-5	Chlorosulfonic acid
108-41-8	m-chlorotoluene
95-49-8	o-chlorotoluene
106-43-4	p-chlorotoluene
75-72-9	Chlorotrifluoromethane
108-39-4	m-cresol
95-48-7	o-cresol
106-44-5	p-cresol
1319-77-3	Mixed cresols
1319-77-3	Cresylic acid
4170-30-0	Crotonaldehyde
3724-65-0	Crontonic acid
98-82-8	Cumene
80-15-9	Cumene hydroperoxide
372-09-8	Cyanoacetic acid
506-77-4	Cyanogen chloride
108-80-5	Cyanuric acid
108-77-0	Cyanuric chloride
110-82-7	Cyclohexane
108-93-0	Cyclohexanol
108-94-1	Cyclohexanone
110-83-8	Cyclohexene
108-91-8	Cyclohexylamine
111-78-4	Cyclooctadiene
112-30-1	Decanol
123-42-2	Diacetone alcohol
27576-04-1	Diaminobenzoic acid
95-76-1, 95-82-9, 554-00-7, 608-27-5, 608-31-1, 626-43-7, 27134-27-6, 57311-92-9[c]	Dichloroaniline
541-73-1	m-dichlorobenzene
95-50-1	o-dichlorobenzene

106-46-7	p-dichlorobenzene
75-71-8	Dichlorodifluoromethane
111-44-4	Dichloroethyl ether
107-06-2	1,2-dichloroethane (EDC)
96-23-1	Dichlorohydrin
26952-23-8	Dichloropropene
101-83-7	Dicyclohexylamine
109-89-7	Diethylamine
111-46-6	Diethylene glycol
112-36-7	Diethylene glycol diethyl ether
111-96-6	Diethylene glycol dimethyl ether
112-34-5	Diethylene glycol monobutyl ether
124-17-7	Diethylene glycol mononbutyl ether acetate
111-90-0	Diethylene glycol monoethyl ether
112-15-2	Diethylene glycol monoethyl ether acetate
111-77-3	Diethylene glycol monomethyl ether
64-67-5	Diethyl sulfate
75-37-6	Difluoroethane
25167-70-8	Diisobutylene
26761-40-0	Diisodecyl phthalate
27554-26-3	Diisooctyl phthalate
674-82-8	Diketene
124-40-3	Dimethylamine
121-69-7	N,N-dimethylaniline
115-10-6	N,N-dimethyl ether
68-12-2	N,N-dimethylformamide
57-14-7	Dimethylhydrazine
77-78-1	Dimethyl sulfate
75-18-3	Dimethyl sulfide
67-68-5	Dimethyl sulfoxide
120-61-6	Dimethyl terephthalate
99-34-3	3,5-dinitrobenzoic acid
51-28-5	Dinitrophenol
	Dinitrotolyene
123-91-1	Dioxane
646-06-0	Dioxilane
122-39-4	Diphenylamine
101-84-4	Diphenyl oxide
102-08-9	Diphenyl thiourea
25265-71-8	Dipropylene glycol
25378-22-7	Dodecene
28675-17-4	Dodecylaniline
27193-86-8	Dodecylphenol
106-89-8	Epichlorohydrin
64-17-5	Ethanol
141-43-5[c]	Ethanolamines
141-78-6	Ethyl acetate
141-97-9	Ethyl acetoacetate

140-88-5	Ethyl acrylate
75-04-7	Ethylamine
100-41-4	Ethylbenzene
74-96-4	Ethyl bromide
9004-57-3	Ethylcellulose
75-00-3	Ethyl chloride
105-39-5	Ethyl chloroacetate
105-56-6	Ethylcyanoacetate
74-85-1	Ethylene
96-49-1	Ethylene carbonate
107-07-3	Ethylene chlorohydrin
107-15-3	Ethylenediamine
106-93-4	Ethylene dibromide
107-21-1	Ethylene glycol
111-55-7	Ethylene glycol diacetate
110-71-4	Ethylene glycol dimethyl ether
111-76-2	Ethylene glycol monobutyl ether
112-07-2	Ethylene glycol monobutyl ether acetate
110-80-5	Ethylene glycol monoethyl ether
111-15-9	Ethylene glycol monoethyl ether acetate
109-86-4	Ethylene glycol monoethyl ether
110-49-6	Ethylene glycol monomethyl ether acetate
122-99-6	Ethylene glycol monophenyl ether
2807-30-9	Ethylene glycol monopropyl ether
75-21-8	Ethylene oxide
60-29-7	Ethyl ether
104-76-7	2-ethylhexanol
122-51-0	Ethyl orthoformate
95-92-1	Ethyl oxalate
41892-71-1	Ethyl sodium oxaloacetate
50-00-0	Formaldehyde
75-12-7	Formamide
64-18-6	Formic acid
110-17-8	Fumaric acid
98-01-1	Furfural
56-81-5	Glycerol (Synthetic)
26545-73-7	Glycerol dichlorohydrin
25791-96-2	Glycerol triether
56-40-6	Glycine
107-22-2	Glyoxal
118-74-1	Hexachlorobenzene
67-72-1	Hexachloroethane
36653-82-4	Hexadecyl alcohol
124-09-4	Hexamethylenediamine
629-11-8	Hexamethylene glycol
100-97-0	Hexamethylenetetramine
74-90-8	Hydrogen cyanide
123-31-9	Hydroquinone

99-96-7	p-hydroxybenzoic acid
26760-64-5	Isoamylene
78-83-1	Isobutanol
110-19-0	Isobutyl acetate
115-11-7	Isobutylene
78-84-2	Isobutyraldehyde
79-31-2	Isobutyric acid
25339-17-7	Isodecanol
26952-21-6	Isooctyl alcohol
78-78-4	Isopentane
78-59-1	Isophorone
121-91-5	Isophthalic acid
78-79-5	Isoprene
67-63-0	Isopropanol
108-21-4	Isopropyl acetate
75-31-0	Isopropylamine
75-29-6	Isopropyl chloride
25168-06-3	Isopropylphenol
463-51-4	Ketene
(b)	Linear alkyl sulfonate*
123-01-3	Linear alkylbenzene
110-16-7	Maleic acid
108-31-6	Maleic anhydride
6915-15-7	Malic acid
141-79-7	Mesityl oxide
121-47-1	Metanilic acid
79-41-4	Methacrylic acid
563-47-3	Methallyl chloride
67-56-1	Methanol
79-20-9	Methyl acetate
105-45-3	Methyl acetoacetate
74-89-5	Methylamine
100-61-8	n-methylaniline
74-83-9	Methyl bromide
37365-71-2	Methyl butynol
74-87-3	Methyl chloride
108-87-2	Methyl cyclohexane
1331-22-2	Methyl cyclohexanone
75-09-2	Methylene chloride
101-77-9	Methylene dianiline
101-68-8	Methylene diphenyl diisocyanate
78-93-3	Methyl ethyl ketone
107-31-3	Methyl formate
108-11-2	Methyl isobutyl carbinol
108-10-1	Methyl isobutyl ketone
80-62-6	Methyl methacrylate
77-75-8	Methylpentynol
98-83-9	B-methylstyrene

110-91-8	Morpholine
85-47-2	a-naphthalene sulfonic acid
120-18-3	B-naphthalene sulfonic acid
90-15-3	a-naphthol
135-19-3	B-naphthol
75-98-9	Neopentanoic acid
88-74-4	o-nitroaniline
100-01-6	p-nitroaniline
91-23-6	o-nitroanisole
100-17-4	p-nitroanisole
98-95-3	Nitrobenzene
27178-83-2[c]	Nitrobenzoic acid (o, m & p)
79-24-3	Nitroethane
75-52-5	Nitromethane
88-75-5	Nitrophenol
25322-01-4	Nitropropane
1321-12-6	Nitrotoluene
27215-95-8	Nonene
25154-52-3	Nonylphenol
27193-28-8	Octylphenol
123-63-7	Paraldehyde
115-77-5	Pentaerythritol
109-66-0	n-pentane
109-67-1	l-pentene
127-18-4	Perchloroethylene
594-42-3	Perchloromethyl mercaptan
94-70-2	o-phenetidine
156-43-4	p-phenetidine
108-95-2	Phenol
98-67-9, 585-38-6, 609-46-1, 133-39-7[c]	Phenolsulfonic acids
91-40-7	Phenyl anthranilic acid
(b)	Phenylenediamine
75-44-5	Phosgene
85-44-9	Phthalic anhydride
85-41-6	Phthalimide
108-99-6	b-picoline
110-85-0	Piperazine
9003-29-6, 25036-29-7[c]	Polybutenes
25322-68-3	Polyethylene glycol
25322-69-4	Polypropylene glycol
123-38-6	Propionaldehyde
79-09-4	Propionic acid
71-23-8	n-propyl alcohol
107-10-8	Propylamine

540-54-5	Propyl chloride
115-07-1	Propylene
127-00-4	Propylene chlorohydrin
78-87-5	Propylene dichloride
57-55-6	Propylene glycol
75-56-9	Propylene oxide
110-86-1	Pyridine
106-51-4	Quinone
108-46-3	Resorcinol
27138-57-4	Resorcylic acid
69-72-7	Salicylic acid
127-09-3	Sodium acetate
532-32-1	Sodium benzoate
9004-32-4	Sodium carboxymethyl cellulose
3926-62-3	Sodium chloroacetate
141-53-7	Sodium formate
139-02-6	Sodium phenate
110-44-1	Sorbic acid
100-42-5	Styrene
110-15-6	Succinic acid
110-61-2	Succinitrile
121-57-3	Sulfanilic acid
126-33-0	Sulfolane
1401-55-4	Tannic acid
100-21-0	Terephthalic acid
79-34-5[c]	Tetrachloroethanes
117-08-8	Tetrachlorophthalic anhydride
78-00-2	Tetraethyllead
119-64-2	Tetrahydronaphthalene
85-43-8	Tetrahydrophthalic anhydride
75-74-1	Tetramethyllead
110-60-1	Tetramethylenediamine
110-18-9	Tetramethylethylenediamine
108-88-3	Toluene
95-80-7	Toluene-2,4-diamine
584-84-9	Toluene-2,4-diisocyanate
26471-62-5	Toluene diisocyanates (mixture)
1333-07-9	Toluene sulfonamide
104-15-4[c]	Toluenesulfonic acids
98-59-9	Toluene sulfonyl chloride
26915-12-8	Toluidines
87-61-6, 108-70-3, 120-82-1[c]	Trichlorobenzenes
71-55-6	1,1,1-trichloroethane
79-00-5	1,1,2-trichloroethane
79-01-6	Trichloroethylene
75-69-4	Trichlorofluoromethane

96-18-4	1,2,3-trichloropropane
76-13-1	1,1,2-trichloro-1,2,2-trifluoroethane
121-44-8	Triethylamine
112-27-6	Triethylene glycol
112-49-2	Triethylene glycoldimethyl ether
7756-94-7	Triisobutylene
75-50-3	Trimethylamine
57-13-6	Urea
108-05-4	Vinyl acetate
75-01-4	Vinyl chloride
75-35-4	Vinylidene chloride
25013-15-4	Vinyl toluene
1330-20-7	Xylenes (mixed)
95-47-6	o-xylene
106-42-3	p-xylene
1300-71-6	Xylenol
1300-73-8	Xylidine
(b)	methyl tert-butyl ether
9002-88-4	Polyethylene
(b)	Polypropylene
9009-53-6	Polystyrene

a) CAS numbers refer to the Chemical Abstracts Registery numbers assigned to specific chemicals, isomers or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

b) No CAS number(s) have been assigned to this chemical, to its isomers, or mixtures containing these chemicals.

c) CAS numbers for some of the isomers are listed: the standards apply to all of the isomers and mixtures, even if CAS numbers have not been assigned.

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.APPENDIX B VOM Measurement Techniques for Capture Efficiency

Procedure G.1 -Captured VOM Emissions

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the volatile organic materials (VOM) content of captured gas streams. It is intended to be used as a segment in the development of liquid/gas or gas/gas protocols for determining VOM capture efficiency (CE) for surface coating and printing operations. The procedure may not be acceptable in certain site specific situations, e.g., when: (1) direct fired heaters or other circumstances affect the quantity of VOM at the control device inlet; and (2) particulate organic aerosols are formed in the process and are present in the captured emissions.

1.2 Principle. The amount of VOM captured (G) is calculated as the sum of the products of the VOM content ($_{Gj}$), the flow rate (Q_{Gj}), and the sample time (T_e) from each captured emissions point.

1.3 Estimated Measurement Uncertainity. The measurement uncertainties are estimated for each captured or fugitive emissions point as follows: Q_{Gj} = 5.5 percent and C_{Gj} = ± 5.0 percent. Based on these numbers, the probable uncertainty for G is estimated at about ±7.4 percent.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, ppm) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Gas VOM Concentration. A schematic of the measurement system is shown in Figure 1. The main components are described below:

2.1.1 Sample Probe. Stainless steel, or equivalent. The probe shall be heated to prevent VOM condensation.

2.1.2 Calibration Valve Assembly. Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

2.1.3 Sample Line. Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent condensation.

2.1.4 Sample Pump. A leak-free pump, to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contact the gas stream shall be constructed of stainless steel or Teflon. The sample pump must be heated to prevent condensation.

2.1.5 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow rate control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 Sample Gas Manifold. Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA), and the remainder to the bypass discharge vent. The manifold components shall be constructed of stainless steel or Teflon. If captured or fugitive emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold and connecting lines to the FIA must be heated to prevent condensation.

2.1.7 Organic Concentration Analyzer. An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.1.7.1 Zero Drift. Less than ±3.0 percent of the span value.

2.1.7.2 Calibration Drift. Less than ±3.0 percent of the span value.

2.1.7.3 Calibration Error. Less than ±5.0 percent of the calibration gas value.

2.1.7.4 Response Time. Less than 30 seconds.

2.1.8 Integrator/Data Acquisition System. An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 seconds. The device shall be capable of recording average values at least once per minute.

2.1.9 Calibration and Other Gases. Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to NIST standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than +2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.1.9.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 Carrier Gas. High purity air with less than 1 ppm of organic material (as propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 FIA Linearity Calibration Gases. Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.1.10 Particulate Filter. An in-stack or an out-of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out-of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 Captured Emissions Volumetric Flow Rate.

2.2.1 Method 2 or 2A Apparatus. For determining volumetric flow rate.

2.2.2 Method 3 Apparatus and Reagents. For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.3 Method 4 Apparatus and Reagents. For determining moisture content, if necessary.

3. DETERMINATION OF VOLUMETRIC FLOW RATE OF CAPTURED EMISSIONS

3.1 Locate all points where emissions are captured from the affected emission unit. Using Method 1, determine the sampling points. Be sure to check each site for cyclonic or swirling flow.

3.2 Measure the velocity at each sampling site at least once every hour during each sampling run using Method 2 or 2A.

4. DETERMINATION OF VOM CONTENT OF CAPTURED EMISSIONS

4.1 Analysis Duration. Measure the VOM responses at each captured emissions point during the entire test run or, if applicable, while the process is operating. If there are multiple captured emission locations, design a sampling system to allow a single FIA to be used to determine the VOM responses at all sampling locations.

4.2 Gas VOM Concentration.

4.2.1 Assemble the sample train as shown in Figure 1. Calibrate the FIA according to the procedure in Section 5.1.

4.2.2 Conduct a system check according to the procedure in Section 5.3.

4.2.3 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct, and is sealed tightly at the stack port connection.

4.2.4 Inject zero gas at the calibration valve assembly. Allow the measurement system response to reach zero. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.

4.2.5 Conduct a system check before and a system drift check after each sampling run according to the procedures in Sections 5.2 and 5.3. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect to perform system drift checks during the run not to exceed one drift check per hour.

4.2.6 Verify that the sample lines, filter, and pump temperatures are 120 ±5 C.

4.2.7 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple captured emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 minutes) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least 4 separate measurements from each sample point during each hour of testing. Disregard the measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 minute and record the concentration measurements.

4.3 Background Concentration.

4.3.1 Locate all NDO's of the TTE. A sampling point shall be centrally located outside of the TTE at 4 equivalent diameters from each NDO, if possible. If there are more than 6 NDO's, choose 6 sampling points evenly spaced among the NDO's.

4.3.2 Assemble the sample train as shown in Figure 2. Calibrate the FIA and conduct a system check according to the procedures in Sections 5.1 and 5.3. NOTE: This sample train shall be a separate sampling train from the one to measure the captured emissions.

4.3.3 Position the probe at the sampling location.

4.3.4 Determine the response time, conduct the system check and sample according to the procedures described in Sections 4.2.4 to 4.2.7.

4.4 Alternative Procedure. The direct interface sampling and analysis procedure described in Section 7.2 of Method 18 may be used to determine the gas VOC concentration. The system must be designed to collect and analyze at least one sample every 10 minutes.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 Systems Drift Checks. Select the calibration gas that most closely approximates the concentration of the captured emissions for conducting the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in Section 5.1 is less than 3 percent of the span value. Conduct the system drift checks at the end of each run.

5.3 System Check. Inject the high range calibration gas at the inlet of the sampling probe and record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in Section 5.1 for the high range calibration gas. Conduct a system check before and after each test run.

5.4 Analysis Audit. Immediately before each test analyze an audit cylinder as described in Section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

A_i = area of NDO i, ft^2;

A_n = total area of all NDO's in the enclosure, ft^2;

C_{Bi} = corrected average VOM concentration of background emissions at point i, ppm propane;

C_B = average background concentration, ppm propane;

C_{Gj} = corrected average VOM concentration of captured emissions at point j, ppm propane;

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane;

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane;

C_H = actual concentration of the drift check calibration gas, ppm propane;

C_i = uncorrected average background VOC concentration measured at point i, ppm propane;

C_j = uncorrected average VOM concentration measured at point j, ppm propane;

G = total VOM content of captured emissions, kg;

$K_i = 1.830 \times 10^{-6}$ kg/ (m^3-ppm);

n = number of measurement points;

Q_{Gj} = average effluent volumetric flow rate corrected to standard conditions at captured emissions point j, m^3/min;

T_c = total duration of captured emissions sampling run, min;

7. CALCULATIONS

7.1 Total VOM Captured Emissions.

$$G = \sum_{j=1}^{n} (C_{Gj} - C_{B}) \; Q_{gj} \; T_{c} \; K_{1} \qquad \text{Eq. 1}$$

7.2 VOM Concentration of the Captured Emissions at Point j.

$$C_{gj} = (C_{j} - C_{DO}) \frac{C_{H}}{C_{DH} - C_{DO}} \qquad \text{Eq. 2}$$

7.3 Background VOM Concentration at Point i.

$$C_{Bi} = (C_{i} - C_{DO}) \frac{C_{H}}{C_{DH} - C_{DO}} \qquad \text{Eq. 3}$$

7.4 Average Background Concentration.

$$C_{B} = \frac{\sum_{i-1}^{n} C_{bi} A_{i}}{nA_{n}} \qquad \text{Eq. 4}$$

NOTE: If the concentration at each point is within 20 percent of the average concentration of all points, the terms "A_i" and "A_n" may be deleted from Equation 4.

Procedure G.2 - Captured VOM Emissions (Dilution Technique)

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the volatile organic materials (VOM) content of captured gas streams. It is intended to be used as a segment in the development of a gas/gas protocol in which fugitive emissions are measured for determining VOM capture efficiency (CE) for surface coating and printing operations. A dilution system is used to reduce the VOM concentration of the captured emission to about the same concentration as the fugitive emission. The procedure may not be acceptable in certain site- specific situations, e.g., when: (1) Direct fired heaters or other circumstances affect the quantity of VOM at the control device inlet; and (2) particulate organic aerosols are formed in the process and are present in the captured emissions.

1.2 Principle. The amount of VOM captured (G) is calculated as the sum of the products of the VOM content (C_{Gj}), the flow rate (Q_{Gj}), and the sampling time (T_C) from each captured emissions point.

1.3 Estimated Measurement Uncertainty. The measurement uncertainties are estimated for each captured or fugitive emissions point as follows: Q_{Gj} = ±5.5 percent and C_{Gj} = ±5 percent. Based on these numbers, the probable uncertainty for G is estimated at about ±7.4 percent.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, ppm) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Gas VOM Concentration. A schematic of the measurement system is shown in Figure 1. The main components are described below:

2.1.1 Dilution System. A Kipp in -stack dilution probe and controller or similar device may be used. The dilution rate may be changed by substituting different critical orifices or adjustments of the aspirator supply pressure. The dilution system shall be heated to prevent VOM condensation. Note: An out -of-stack dilution device may be used.

2.1.2 Calibration Valve Assembly. Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

2.1.3 Sample Line. Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent condensation.

2.1.4 Sample Pump. A leak-free pump, to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contract the gas stream shall be constructed of stainless steel or Teflon. The sample pump must be heated to prevent condensation.

2.1.5 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 Sample Gas Manifold. Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA), and the remainder to the bypass discharge vent. The manifold components shall be constructed of stainless steel or Teflon. If captured or fugitive emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold and connecting lines to the FIA must be heated to prevent condensation.

2.1.7 Organic Concentration Analyzer. An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements.

The system shall be capable of meeting or exceeding the following specifications:

2.1.7.1 Zero Drift. Less than ±3.0 percent of the span value.

2.1.7.2 Calibration Drift. Less than ±3.0 percent of the span value.

2.1.7.3 Calibration Error. Less than ±5.0 percent of the calibration gas value.

2.1.7.4 Response Time. Less than 30 seconds.

2.1.7.8 Integrator/Data Acquisition System. An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 seconds. The device shall be capable of recording average values at least once per minute.

2.1.9 Calibration and Other Gases. Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to NIST standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution system, may be used with prior approval.

2.1.9.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 Carrier Gas and Dilution Air Supply. High purity air with less than 1 ppm of organic material (as propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 FIA Linearity Calibration Gases. Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.1.9.4 Dilution Check Gas. Gas mixture standard containing propane in air, approximately half the span value after dilution.

2.1.10 Particulate Filter. An in -stack or an out -of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out -of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 Captured Emissions Volumetric Flow Rate.

2.2.1 Method 2 or 2A Apparatus. For determining volumetric flow rate.

2.2.2 Method 3 Apparatus and Reagents. For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.3 Method 4 Apparatus and Reagents. For determining moisture content, if necessary.

3. DETERMINATION OF VOLUMETRIC FLOW RATE OF CAPTURED EMISSIONS

3.1 Locate all points where emissions are captured from the affected facility. Using Method 1, determine the sampling points. Be sure to check each site for cyclonic or swirling flow.

3.2 Measure the velocity at each sampling site at least once every hour during each sampling run using Method 2 or 2A.

4. DETERMINATION OF VOM CONTENT OF CAPTURED EMISSIONS

4.1 Analysis Duration. Measure the VOM responses at each captured emissions point during the entire test run or, if applicable, while the process is operating. If there are multiple captured emissions locations, design a sampling system to allow a single FIA to be used to determine the VOM responses at all sampling locations.

4.2 Gas VOM Concentration.

4.2.1Assemble the sample train as shown in Figure 1. Calibrate the FIA according to the procedure in section 5.1.

4.2.2 Set the dilution ratio and determine the dilution factor according to the procedure in section 5.3.

4.2.3 Conduct a system check according to the procedure in section 5.4.

4.2.4 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct, and is sealed tightly at the stack port connection.

4.2.5 Inject zero gas at the calibration valve assembly. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.

4.2.6 Conduct a system check before and a system drift check after each sampling run according to the procedures in sections 5.2 and 5.4. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect to perform system drift checks during the run not to exceed one drift check per hour.

4.2.7 Verify that the sample lines, filter, and pump temperatures are 120 ±5 °C.

4.2.8 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple captured emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 minutes) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least 4 separate measurements from each sample point during each hour of testing. Disregard the measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 minute and record the concentration measurements.

4.3 Background Concentration.

4.3.1 Locate all NDO's of the TTE. A sampling point shall be centrally located outside of the TTE at 4 equivalent diameters from each NDO, if possible. If there are more than 6 NDO's, choose 6 sampling points evenly spaced among the NDO's.

4.3.2 Assemble the sample train as shown in Figure 2. Calibrate the FIA and conduct a system check according to the procedures in sections 5.1 and 5.4.

4.3.3 Position the probe at the sampling location.

4.3.4 Determine the response time, conduct the system check and sample according to the procedures described in sections 4.2.4 to 4.2.8.

4.4 Alternative Procedure. The direct interface sampling and analysis procedure described in section 7.2 of Method 18 may be used to determine the gas VOM concentration. The system must be designed to collect and analyze at least one sample every 10 minutes.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system after the dilution system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 Systems Drift Checks. Select the calibration gas that most closely approximates the concentration of the diluted captured emissions for conducting the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in section 5.1 is less than 3 percent of the span value. Conduct the system drift check at the end of each run.

5.3 Determination of Dilution Factor. Inject the dilution check gas into the measurement system before the dilution system and record the response. Calculate the dilution factor using Equation 3.

5.4 System Check. Inject the high range calibration gas at the inlet to the sampling probe while the dilution air is turned off. Record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in section 5.1 for the high range calibration gas. Conduct a system check before and after each test run.

5.5 Analysis Audit. Immediately before each test analyze an audit cylinder as described in section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

A_i = area of NDO i, ft^2;

A_N = total area of all NDO's in the enclosure, ft^2;

C_A = actual concentration of the dilution check gas, ppm propane;

C_{Bi} = corrected average VOM concentration of background emissions at point i, ppm propane;

C_B = average background concentration, ppm propane;

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane;

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane;

C_H = actual concentration of the drift check calibration, gas, ppm propane;

C_i = uncorrected average background VOM concentration measured at point i, ppm propane;

C_j = uncorrected average VOM concentration measured at point j, ppm propane;

C_M = measured concentration of the dilution check gas, ppm propane;

DF = dilution factor;

G = total VOCM content of captured emissions, kg;

$K_1 = 1.830 \times 10^{-6}$ kg/(m^3 -ppm);

n = number of measurement points;

Q_{Gj} = average effluent volumetric flow rate corrected to standard conditions at captured emissions point j, m^3 /min;

T_C = total duration of capture efficiency sampling run, min.

7. CALCULATIONS

7.1 Total VOM Captured Emissions.

$$G = \sum_{j=1}^{n} C_{Gj} \; Q_{Gj} \; T_c \quad K_i \qquad \text{Eq. 1}$$

7.2 VOM Concentration of the Captured Emissions to Point j.

$$C_{Gj} = DF \; (C_j - C_{DO}) \; \frac{C_H}{C_{DH} - C_{DO}} \qquad \text{Eq. 2}$$

7.3 Dilution Factor.

$$D_F = \frac{C_A}{C_M} \qquad \text{Eq. 3}$$

7.4 Background VOM Concentration at Point i.

$$C_{Bi} = (C_i - C_{DO}) \; \frac{C_H}{C_{DH} - C_{DO}} \qquad \text{Eq. 4}$$

7.5 Average Background Concentration.

$$C_B = \frac{\sum_{i=1}^{n} C_{BJ} \; A_i}{nA_N} \qquad \text{Eq. 5}$$

NOTE: If the concentration at each point is within 20 percent of the average concentration of all points, the terms “A_i” and “A_N” may be deleted from Equation 4.

Procedure F.2 - Fugitive VOM Emissions from Building Enclosures

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the fugitive volatile organic materials (VOM) emissions from a building enclosure (BE). It is intended to be used as a segment in the development of liquid/gas or gas/gas protocols for determining VOM capture efficiency (CE) for surface coating and printing operations.

1.2 Principle. The total amount of fugitive VOM emissions (F_B) from the BE is calculated as the sum of the products of the VOM content (C_{Fj}) of each fugitive emissions point, its flow rate (Q_{Fj}), and time (T_F).

1.3 Measurement Uncertainty. The measurement uncertainties are estimated for each fugitive emissions point as follows: Q_{Fj} = ±5.0 percent and C_{Fj} = ±5.0 percent. Based on these numbers, the probable uncertainty for F_B is estimated at about ±11.2 percent.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, ppm) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Gas VOM Concentration. A schematic of the measurement system is shown in Figure 1. The main components are described below:

2.1.1 Sample Probe. Stainless steel, or equivalent. The probe shall be heated to prevent VOM condensation.

2.1.2 Calibration Valve Assembly. Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

2.1.3 Sample Line. Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent condensation.

2.1.4 Sample Pump. A leak-free pump, to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contact the gas stream shall be constructed of stainless steel or Teflon. The sample pump must be heated to prevent condensation.

2.1.5 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow rate control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 Sample Gas Manifold. Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA), and the remainder to the bypass discharge vent. The manifold components shall be constructed of stainless steel or Teflon. If emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold must be heated to prevent condensation.

2.1.7 Organic Concentration Analyzer. An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable or exceeding the following specifications:

2.1.7.1 Zero Drift. Less than ±3.0 percent of the span value.

2.1.7.2 Calibration Drift. Less than ±3.0 percent of the span value.

2.1.7.3 Calibration Error. Less than ±5.0 percent of the calibration gas value.

2.1.7.4 Response Time. Less than 30 seconds.

2.1.8 Integrator/Data Acquisition System. An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 seconds. The device shall be capable of recording average values at least once per minute.

2.1.9 Calibration and Other Gases. Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to NIST standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.1.9.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 Carrier Gas. High purity air with less than 1 ppm of organic material (propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 FIA Linearity Calibration Gases. Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.1.10 Particulate Filter. An in -stack or an out -of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out -of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 Fugitive Emissions Volumetric Flow Rate.

2.2.1 Flow Direction Indicators. Any means of indicating inward or outward flow, such as light plastic film or paper streamers, smoke tubes, filaments, and sensory perception.

2.2.2 Method 2 or 2A Apparatus. For determining volumetric flow rate. Anemometers or similar devices calibrated according to the manufacturer's instructions may be used when low velocities are present. Vane anemometers (Young-maximum response propeller), specialized pitots with electronic manometers (e.g., Shortridge Instruments Inc., Airdata Multimeter 860) are commercially available with measurement thresholds of 15 and 8 mpm (50 and 25 fpm), respectively.

2.2.3 Method 3 Apparatus and Reagents. For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.4 Method 4 Apparatus and Reagents. For determining moisture content, if necessary.

3. DETERMINATION OF VOLUMETRIC FLOW RATE OF FUGITIVE EMISSIONS

3.1 Preliminary Determinations. The purpose of this exercise is to determine which exhaust points should be measured for volumetric flow rates and VOM concentrations.

3.1.1 Forced Draft Openings. Identify all forced draft openings. Determine the volumetric flow rate according to Method 2.

3.1.2 NDO's Exhaust Points. The NDO's in the roof of a facility are considered to be exhaust points. Determine volumetric flow rate from these NDO's. Divide the cross -sectional area according to Method 1 using 12 equal areas. Use the appropriate velocity measurement devices, e.g., propeller anemometers.

3.1.3 Other NDO's.

3.1.3.1 This step is optional. Determine the exhaust flow rate, including that of the control device, from the enclosure and the intake air flow rate. If the exhaust flow rate divided by the intake air flow rate is greater than 1.1, then all other NDO's are not considered to be significant exhaust points.

3.1.3.2 If the option above is not taken, identify all other NDO's and other potential points through which fugitive emissions may escape the enclosure. Then use the following criteria to determine whether flow rates and VOM concentrations need to be measured:

3.1.3.2.1 Using the appropriate flow direction indicator, determine the flow direction. An NDO with zero or inward flow is not an exhaust point.

3.1.3.2.2 Measure the outward volumetric flow rate from the remainder of the NDO's. If the collective flow rate is 2 percent, or less, of the flow rate from sections 3.1.1 and 3.1.2, then these NDO's, except those within two equivalent diameters (based on NDO opening) from VOM sources, may be considered to be non-exhaust points.

3.1.3.2.3 If the percentage calculated in section 3.1.3.2.2 is greater than 2 percent, those NDO's (except those within two equivalent diameters from VOM sources) whose volumetric flow rate totals 2 percent of the flow rate from sections 3.1.1 and 3.1.2 may be considered as non-exhaust points. All remaining NDO's shall be measured for volumetric flow rate and VOM concentrations during the CE test.

3.1.3.2.4 The tester may choose to measure VOM concentrations at the forced exhaust points and the NDO's. If the total VOM emissions from the NDO's are less than 2 percent of the emissions from the forced draft and roof NDO's, then these NDO's may be eliminated from further consideration.

3.2 Determination of Flow Rates.

3.2.1 Measure the volumetric flow rate at all locations identified as exhaust points in section 3.1. Divide each exhaust opening into 9 equal areas for rectangular openings and 8 for circular openings.

3.2.2 Measure the velocity at each site at least once every hour during each sampling run using Method 2 or 2A, if applicable, or using the low velocity instruments in section 2.2.2.

4. DETERMINATION OF VOM CONTENT OF FUGITIVE EMISSIONS

4.1 Analysis Duration. Measure the VOM responses at each fugitive emission point during the entire test run or, if applicable, while the process is operating. If there are multiple emissions locations, design a sampling system to allow a single FIA to be used to determine the VOM responses at all sampling locations.

4.2 Gas VOM Concentration.

4.2.1 Assemble the sample train as shown in Figure 1. Calibrate the FIA and conduct a system check according to the procedures in sections 5.1 and 5.3, respectively.

4.2.2 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct, and is sealed tightly at the stack port connection.

4.2.3 Inject zero gas at the calibration valve assembly. Allow the measurement system response to reach zero. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.

4.2.4 Conduct a system check before and a system drift check after each sampling run according to the procedures in sections 5.2 and 5.3. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect to perform drift checks during the run not to exceed one drift check per hour.

4.2.5 Verify that the sample lines, filter, and pump temperatures are 120 ±5 °C.

4.2.6 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 minutes) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least 4 separate measurements from each sample point during each hour of testing. Disregard the response measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 minute and record the concentration measurements.

4.3 Alternative Procedure. The direct interface sampling and analysis procedure described in section 7.2 of Method 18 may be used to determine the gas VOM concentration. The system must be designed to collect and analyze at least one sample every 10 minutes.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 Systems Drift Checks. Select the calibration gas that most closely approximates the concentration of the captured emissions for conducting the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in section 5.1 is less than 3 percent of the span value. Conduct a system drift check at the end of each run.

5.3 System Check. Inject the high range calibration gas at the inlet of the sampling probe and record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in section 5.1 for the high range calibration gas. Conduct a system check before each test run.

5.4 Analysis Audit. Immediately before each test analyze an audit cylinder as described in section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane.

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane.

C_{Fj} = corrected average VOM concentration of fugitive emissions at point j, ppm propane.

C_{H} = actual concentration of the drift check calibration gas, ppm propane.

Cj = uncorrected average VOM concentration measured at point j, ppm propane.

F_{B} = total VOM content of fugitive emissions from the building, kg.

$K_1 = 1.830\times10^{-6}$ kg/(m^3 -ppm).

n = number of measurement points.

Q_{Fj} = average effluent volumetric flow rate corrected to standard conditions at fugitive emissions point j, m^3 /min.

T_F = total duration of capture efficiency sampling run, min.

7. CALCULATIONS

7.1 Total VOM Fugitive Emissions from the Building.

$$F_B = \sum_{j=1}^{n} C_{fj}\ Q_{fj}\ T_F\ K_1 \qquad \text{Eq. 1}$$

7.2 VOM Concentration of the Fugitive Emissions at Point j.

$$C_{Fj} = (C_j - C_{DO})\ \frac{C_H}{C_{DH} - C_{DO}} \qquad \text{Eq.2}$$

Procedure F.1 - Fugitive VOM Emissions From Temporary Enclosures

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the fugitive volatile organic materials (VOM) emissions from a temporary total enclosure (TTE). It is intended to be used as a segment in the development of liquid/gas or gas/gas protocols for determining VOM capture efficiency (CE) for surface coating and printing operations.

1.2 Principle. The amount of fugitive VOM emissions (F) from the TTE is calculated as the sum of the products of the VOM content (C_{Fj}), the flow rate (Q_{Fj}), and the sampling time (T_F) from each fugitive emissions point.

1.3 Estimated Measurement Uncertainty. The measurement uncertainties are estimated for each fugitive emission point as follows: Q_{Fj} = ±5.5 percent and C_{Fj} = ± 5.0 percent. Based on these numbers, the probable uncertainty for F is estimated at about ± 7.4 percent.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, ppm) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Gas VOM Concentration. A schematic of the measurement system is shown in Figure 1. The main components are described below:

2.1.1 Sample Probe. Stainless steel, or equivalent. The probe shall be heated to prevent VOM condensation.

2.1.2 Calibration Valve Assembly. Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

2.1.3 Sample Line. Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent condensation.

2.1.4 Sample Pump. A leak-free pump, to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contact the gas stream shall be constructed of stainless steel or Teflon. The sample pump must be heated to prevent condensation.

2.1.5 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 Sample Gas Manifold. Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA), and the remainder to the bypass discharge vent. The manifold components shall be constructed of stainless steel or Teflon. If emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold and connecting lines to the FIA must be heated to prevent condensation.

2.1.7 Organic Concentration Analyzer. An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.1.7.1 Zero Drift. Less than ±3.0 percent of the span value.

2.1.7.2 Calibration Drift. Less than ±3.0 percent of the span value.

2.1.7.3 Calibration Error. Less than ±5.0 percent of the calibration gas value.

2.1.7.4 Response Time. Less than 30 seconds.

2.1.8 Integrator/data Acquisition System. An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 seconds. The device shall be capable of recording average values at least once per minute.

2.1.9 Calibration and Other Gases. Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to NIST standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.1.9.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 Carrier Gas. High purity air with less than 1 ppm of organic material (as propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 FIA Linearity Calibration Gases. Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.1.10 Particulate Filter. An in -stack or an out -of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out -of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 Fugitive Emissions Volumetric Flow Rate.

2.2.1 Method 2 or 2A Apparatus. For determining volumetric flow rate.

2.2.2 Method 3 Apparatus and Reagents. For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.3 Method 4 Apparatus and Reagents. For determining moisture content, if necessary.

2.3 Temporary Total Enclosure. The criteria for designing a TTE are discussed in Procedure T.

3. DETERMINATION OF VOLUMETRIC FLOW RATE OF FUGITIVE EMISSIONS

3.1 Locate all points where emissions are exhausted from the TTE. Using Method 1, determine the sampling points. Be sure to check each site for cyclonic or swirling flow.

3.2 Measure the velocity at each sampling site at least once every hour during each sampling run using Method 2 or 2A.

4. DETERMINATION OF VOM CONTENT OF FUGITIVE EMISSIONS

4.1 Analysis Duration. Measure the VOM responses at each fugitive emission point during the entire test run or, if applicable, while the process is operating. If there are multiple emission locations, design a sampling system to allow a single FIA to be used to determine the VOM responses at all sampling locations.

4.2 Gas VOM Concentration.

4.2.1 Assemble the sample train as shown in Figure 1. Calibrate the FIA and conduct a system check according to the procedures in sections 5.1 and 5.3, respectively.

4.2.2 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct, and is sealed tightly at the stack port connection.

4.2.3 Inject zero gas at the calibration valve assembly. Allow the measurement system response to reach zero. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.

4.2.4 Conduct a system check before and a system drift check after each sampling run according to the procedures in sections 5.2 and 5.3. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect to perform system drift checks during the run not to exceed one drift check per hour.

4.2.5 Verify that the sample lines, filter, and pump temperatures are 120 ±5 °C.

4.2.6 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 minutes) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least 4 separate measurements from each sample point during each hour of testing. Disregard the response measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 minute and record the concentration measurements.

4.3 Background Concentration.

4.3.1 Determination of VOM Background Concentration.

4.3.1.1 Locate all NDO's of the TTE. A sampling point shall be centrally located outside of the TTE at 4 equivalent diameters from each NDO, if possible. If there are more than 6 NDO's, choose 6 sampling points evenly spaced among the NDO's.

4.3.1.2 Assemble the sample train as shown in Figure 2. Calibrate the FIA and conduct a system check according to the procedures in sections 5.1 and 5.3.

4.3.1.3 Position the probe at the sampling location.

4.3.1.4 Determine the response time, conduct the system check and sample according to the procedures described in sections 4.2.3 to 4.2.6.

4.4 Alternative Procedure. The direct interface sampling and analysis procedure described in section 7.2 of Method 18 may be used to determine the gas VOM concentration. The system must be designed to collect and analyze at least one sample every 10 minutes.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 Systems Drift Checks. Select the calibration gas concentration that most closely approximates that of the fugitive gas emissions to conduct the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in section 5.1 is less than 3 percent of the span value. Conduct a system drift check at the end of each run.

5.3 System Check. Inject the high range calibration gas at the inlet of the sampling probe and record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in section 5.1 for the high range calibration gas. Conduct a system check before each test run.

5.4 Analysis Audit. Immediately before each test analyze an audit cylinder as described in section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

A_i = area of NDO i, ft^2.

A_N = total area of all NDO's in the enclosure, ft^2.

C_{Bi} = corrected average VOM concentration of background emissions at point i, ppm propane.

C_B = average background concentration, ppm propane.

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane.

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane.

C_{Fj} = corrected average VOM concentration of fugitive emissions at point j, ppm propane.

C_H = actual concentration of the drift check calibration gas, ppm propane.

C_i = uncorrected average background VOM concentration at point i, ppm propane.

C_j = uncorrected average VOM concentration measured at point j, ppm propane.

G = total VOM content of fugitive emissions, kg.

$K_1 = 1.830\times10^{-6}$ kg/(m^3 -ppm).

n = number of measurement points.

Q_{Fj} = average effluent volumetric flow rate corrected to standard conditions at fugitive emissions point j, m^3 /min.

T_F = total duration of fugitive emissions sampling run, min.

7. CALCULATIONS

7.1 Total VOM Fugitive Emissions.

$$F = \sum_{j=1}^{n} (C_{Fj} - C_B)\, Q_{fj}\ T_F\ K_i \qquad \text{Eq. 1}$$

7.2 VOM Concentration of the Fugitive Emissions at point j.

$$C_{Fj} = (C_j - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}} \qquad \text{Eq. 2}$$

7.3 Background VOM Concentration at Point i.

$$C_{Bi} = (C_i - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}} \qquad \text{Eq. 3}$$

7.4 Average Background Concentration.

$$C_B = \frac{\sum_{i=1}^{n} C_{bi}\ A_i}{nA_n} \qquad \text{Eq. 5}$$

NOTE: If the concentration at each point is within 20 percent of the average concentration of all points, the terms "A_i" and "A_N" may be deleted from Equation 4.

Procedure L - VOM Input

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the input of volatile organic materials (VOM). It is intended to be used as a segment in the development of liquid/gas protocols for determining VOM capture efficiency (CE) for surface coating and printing operations.

1.2 Principle. The amount of VOM introduced to the process (L) is the sum of the products of the weight (W) of each VOM containing liquid (ink, paint, solvent, etc.) used and its VOM content (V). A sample of each VOM containing liquid is analyzed with a flame ionization analyzer (FIA) to determine V.

1.3 Estimated Measurement Uncertainty. The measurement uncertainties are estimated for each VOM containing liquid as follows: W = ±2.0 percent and V = ±12.0 percent. Based on these numbers, the probable uncertainty for L is estimated at about ±12.2 percent for each VOM containing liquid.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, ppm) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Liquid Weight.

2.1.1 Balances/Digital Scales. To weigh drums of VOM containing liquids to within 0.2 lb.

2.1.2 Volume Measurement Apparatus (Alternative). Volume meters, flow meters, density measurement equipment, etc., as needed to achieve same accuracy as direct weight measurements.

2.2 VOM Content (Flame Ionization Analyzer Technique). The liquid sample analysis system is shown in Figures 1 and 2. The following equipment is required:

2.2.1 Sample collection can. An appropriately sized metal can to be used to collect VOM containing materials. The can must be constructed in such a way that it can be grounded to the coating container.

2.2.2 Needle Valves. To control gas flow.

2.2.3 Regulators. For carrier gas and calibration gas cylinders.

2.2.4 Tubing. Teflon or stainless steel tubing with diameters and lengths determined by connection requirements of equipment. The tubing between the sample oven outlet and the FIA shall be heated to maintain a temperature of 120 ±5 °C.

2.2.5 Atmospheric Vent. A tee and 0- to 0.5 -liter/min rotameter placed in the sampling line between the carrier gas cylinder and the VOM sample vessel to release the excess carrier gas. A toggle valve placed between the tee and the rotameter facilitates leak tests of the analysis system.

2.2.6 Thermometer. Capable of measuring the temperature of the hot water bath to within 1°C.

2.2.7 Sample Oven. Heated enclosure, containing calibration gas coil heaters, critical orifice, aspirator, and other liquid sample analysis components, capable of maintaining a temperature of 120 ±5 °C.

2.2.8 Gas Coil Heaters. Sufficient lengths of stainless steel or Teflon tubing to allow zero and calibration gases to be heated to the sample oven temperature before entering the critical orifice or aspirator.

2.2.9 Water Bath. Capable of heating and maintaining a sample vessel temperature of 100 ±5°C.

2.2.10 Analytical Balance. To measure ±0.001 g.

2.2.11 Disposable Syringes. 2-cc or 5-cc.

2.2.12 Sample Vessel. Glass, 40-ml septum vial. A separate vessel is needed for each sample.

2.2.13 Rubber Stopper. Two-hole stopper to accommodate 3.2 -mm (1/8-in.) Teflon tubing, appropriately sized to fit the opening of the sample vessel. The rubber stopper should be wrapped in Teflon tape to provide a tighter seal and to prevent any reaction of the sample with the rubber stopper. Alternatively, any leak-free closure fabricated of non-reactive materials and accommodating the necessary tubing fittings may be used.

2.2.14 Critical Orifices. Calibrated critical orifices capable of providing constant flow rates from 50 to 250 ml/min at known pressure drops. Sapphire orifice assemblies (available from O'Keefe Controls Company) and glass capillary tubing have been found to be adequate for this application.

2.2.15 Vacuum Gauge. 0 -to 760-mm (0- to 30-in.) Hg U-Tube manometer or vacuum gauge.

2.2.16 Pressure Gauge. Bourdon gauge capable of measuring the maximum air pressure at the aspirator inlet (e.g., 100 psig).

2.2.17 Aspirator. A device capable of generating sufficient vacuum at the sample vessel to create critical flow through the calibrated orifice when sufficient air pressure is present at the aspirator inlet. The aspirator must also provide sufficient sample pressure to operate the FIA. The sample is also mixed with the dilution gas within the aspirator.

2.2.18 Soap Bubble Meter. Of an appropriate size to calibrate the critical orifices in the system.

2.2.19 Organic Concentration Analyzer. An FIA with a span value of 1.5 times the expected concentration as propane; however other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.2.19.1 Zero Drift. Less than ±3.0 percent of the span value.

2.2.19.2 Calibration Drift. Less than ±3.0 percent of span value.

2.2.19.3 Calibration Error. Less than ±5.0 percent of the calibration gas value.

2.2.20 Integrator/Data Acquisition System. An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 seconds. The device shall be capable of recording average values at least once per minute.

2.2.21 Chart Recorder (Optional). A chart recorder or similar device is recommended to provide a continuous analog display of the measurement results during the liquid sample analysis.

2.2.22 Calibration and Other Gases. For calibration, fuel, and combustion air (if required) contained in compressed gas cylinders. All calibration gases shall be traceable to NIST standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.2.22.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.2.22.2 Carrier Gas. High purity air with less than 1 ppm of organic material (as propane) or less than 0.1 percent of the span value, whichever is greater.

2.2.22.3 FIA Linearity Calibration Gases. Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.2.22.4 System Calibration Gas. Gas mixture standard containing propane in air, approximately the undiluted VOM concentration expected for the liquid samples.

3. DETERMINATION OF LIQUID INPUT WEIGHT

3.1 Weight Difference. Determine the amount of material introduced to the process as the weight difference of the feed material before and after each sampling run. In determining the total VOM containing liquid usage, account for: (a) The initial (beginning) VOM containing liquid mixture; (b) any solvent added during the test run; (c) any coating added during the test run; and (d) any residual VOM containing liquid mixture remaining at the end of the sample run.

3.1.1 Identify all points where VOM containing liquids are introduced to the process. To obtain an accurate measurement of VOM containing liquids, start with an empty fountain (if applicable). After completing the run, drain the liquid in the fountain back into the liquid drum (if possible), and weigh the drum again. Weigh the VOM containing liquids to ±0.5 percent of the total weight (full) or ±0.1 percent of the total weight of VOM containing liquid used during the sample run, whichever is less. If the residual liquid cannot be returned to the drum, drain the fountain into a preweighed empty drum to determine the final weight of the liquid.

3.1.2 If it is not possible to measure a single representative mixture, then weigh the various components separately (e.g., if solvent is added during the sampling run, weigh the solvent before it is added to the mixture). If a fresh drum of VOM containing liquid is needed during the run, then weigh both the empty drum and fresh drum.

3.2 Volume Measurement (Alternative). If direct weight measurements are not feasible, the tester may use volume meters and flow rate meters (and density measurements) to determine the weight of liquids used if it can be demonstrated that the technique produces results equivalent to the direct weight measurements. If a single representative mixture cannot be measured, measure the components separately.

4. DETERMINATION OF VOM CONTENT IN INPUT LIQUIDS

4.1 Collection of Liquid Samples.

4.1.1 Collect a 100-ml or larger sample of the VOM containing liquid mixture at each application location at the beginning and end of each test run. A separate sample should be taken of each VOM containing liquid added to the application mixture during the test run. If a fresh drum is needed during the sampling run, then obtain a sample from the fresh drum.

4.1.2 When collecting the sample, ground the sample container to the coating drum. Fill the sample container as close to the rim as possible to minimize the amount of headspace.

4.1.3 After the sample is collected, seal the container so the sample cannot leak out or evaporate.

4.1.4 Label the container to identify clearly the contents.

4.2 Liquid Sample VOM Content.

4.2.1 Assemble the liquid VOM content analysis system as shown in Figure 1.

4.2.2 Permanently identify all of the critical orifices that may be used. Calibrate each critical orifice under the expected operating conditions (i.e., sample vacuum and temperature) against a volume meter as described in section 5.3.

4.2.3 Label and tare the sample vessels (including the stoppers and caps) and the syringes.

4.2.4 Install an empty sample vessel and perform a leak test of the system. Close the carrier gas valve and atmospheric vent and evacuate the sample vessel to 250 mm (10 in.) Hg absolute or less using the aspirator. Close the toggle valve at the inlet to the aspirator and observe the vacuum for at least one minute. If there is any change in the sample pressure, release the vacuum, adjust or repair the apparatus as necessary and repeat the leak test.

4.2.5 Perform the analyzer calibration and linearity checks according to the procedure in section 5.1. Record the responses to each of the calibration gases and the back-pressure setting of the FIA.

4.2.6 Establish the appropriate dilution ratio by adjusting the aspirator air supply or substituting critical orifices. Operate the aspirator at a vacuum of at least 25 mm (1 in.) Hg greater than the vacuum necessary to achieve critical flow. Select the dilution ratio so that the maximum response of the FIA to the sample does not exceed the high-range calibration gas.

4.2.7 Perform system calibration checks at two levels by introducing compressed gases at the inlet to the sample vessel while the aspirator and dilution devices are operating. Perform these checks using the carrier gas (zero concentration) and the system calibration gas. If the response to the carrier gas exceeds ±0.5 percent of span, clean or repair the apparatus and repeat the check. Adjust the dilution ratio as necessary to achieve the correct response to the upscale check, but do not adjust the analyzer calibration. Record the identification of the orifice, aspirator air supply pressure, FIA back-pressure, and the responses of the FIA to the carrier and system calibration gases.

4.2.8 After completing the above checks, inject the system calibration gas for approximately 10 minutes. Time the exact duration of the gas injection using a stopwatch. Determine the area under the FIA response curve and calculate the system response factor based on the sample gas flow rate, gas concentration, and the duration of the injection as compared to the integrated response using Equations 2 and 3.

4.2.9 Verify that the sample oven and sample line temperatures are 120 ±5 °C and that the water bath temperature is 100 ±5 °C.

4.2.10 Fill a tared syringe with approximately 1 g of the VOM containing liquid and weigh it. Transfer the liquid to a tared sample vessel. Plug the sample vessel to minimize sample loss. Weigh the sample vessel containing the liquid to determine the amount of sample actually received. Also, as a quality control check, weigh the empty syringe to determine the amount of material delivered. The two coating sample weights should agree within ±0.02 g. If not, repeat the procedure until an acceptable sample is obtained.

4.2.11 Connect the vessel to the analysis system. Adjust the aspirator supply pressure to the correct value. Open the valve on the carrier gas supply to the sample vessel and adjust it to provide a slight excess flow to the atmospheric vent. As soon as the initial response of the FIA begins to decrease, immerse the sample vessel in the water bath. (Applying heat to the sample vessel too soon may cause the FID response to exceed the calibrated range of the instrument, and thus invalidate the analysis.)

4.2.12 Continuously measure and record the response of the FIA until all of the volatile material has been evaporated from the sample and the instrument response has returned to the baseline (i.e., response less than 0.5 percent of the span value). Observe the aspirator supply pressure, FIA back-pressure, atmospheric vent, and other system operating parameters during the run; repeat the analysis procedure if any of these parameters deviate from the values established during the system calibration checks in Section 4.2.7. After each sample perform the drift check described in Section 5.2. If the drift check results are acceptable, calculate the VOM content of the sample using the equations in Section 7. Integrate the area under the FIA response curve, or determine the average concentration response and the duration of sample analysis.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 Systems Drift Checks. After each sample, repeat the system calibration checks in Section 4.2.7 before any adjustments to the FIA or measurement system are made. If the zero or calibration drift exceeds ±3 percent of the span value, discard the result and repeat the analysis.

5.3 Critical Orifice Calibration.

5.3.1 Each critical orifice must be calibrated at the specific operating conditions that it will be used. Therefore, assemble all components of the liquid sample analysis system as shown in Figure 3. A stopwatch is also required.

5.3.2 Turn on the sample oven, sample line, and water bath heaters and allow the system to reach the proper operating temperature. Adjust the aspirator to a vacuum of 380 mm (15 in.) Hg vacuum. Measure the time required for one soap bubble to move a known distance and record barometric pressure.

5.3.3 Repeat the calibration procedure at a vacuum of 406 mm (16 in.) Hg and at 25-mm (1- in.) Hg intervals until three consecutive determinations provide the same flow rate. Calculate the critical flow rate for the orifice in ml/min at standard conditions. Record the vacuum necessary to achieve critical flow.

6. NOMENCLATURE

A_L = area under the response curve of the liquid sample, area count.

A_S = area under the response curve of the calibration gas, area count.

C_S = actual concentration of system calibration gas, ppm propane.

$K = 1.830 \times 10^{-9}$ g/ (ml-ppm).

L = total VOC content of liquid input, kg.

M_L = mass of liquid sample delivered to the sample vessel, g.

q = flow rate through critical orifice, ml/min.

RF = liquid analysis system response factor, g/area count.

T_S = total gas injection time for system calibration gas during integrator calibration, min.

V_{Fj} = final VOM fraction of VOM containing liquid j.

V_{Ij} = initial VOM fraction of VOM containing liquid j.

V_{Aj} = VOM fraction of VOM containing liquid j added during the run.

V = VOM fraction of liquid sample.

W_{Fj} = weight of VOM containing liquid j remaining at end of the run, kg.

W_{Ij} = weight of VOM containing liquid j at beginning of the run, kg.

W_{Aj} = weight of VOM containing liquid j added during the run, kg.

7. CALCULATIONS

7.1 Total VOM Content of the Input VOM Containing Liquid.

$$L = \sum_{j=1}^{n} V_{Ij} W_{Ij} = V_{fj} W_{fj} + \sum_{j=1}^{n} V_{Aj} W_{Aj} \underset{j=1}{\overset{n}{R}} \qquad \text{Eq. 1}$$

7.2 Liquid Sample Analysis System Response Factor for Systems Using Intergrators, Grams/Area Counts.

$$RF = \frac{C_S\, q\, T_S\, K}{A_S} \qquad \text{Eq. 2}$$

7.13 VOC Content of the Liquid Sample.

$$V = \frac{A_L RF}{M_L} \qquad \text{Eq. } 3$$

Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure

1. INTRODUCTION

1.1 Applicability. This procedure is used to determine whether a permanent or temporary enclosure meets the criteria of a total enclosure.

1.2 Principle. An enclosure is evaluated against a set of criteria. If the criteria are met and if all the exhaust gases are ducted to a control device, then the volatile organic materials (VOM) capture efficiency (CE) is assumed to be 100 percent and CE need not be measured. However, if part of the exhaust gas stream is not ducted to a control device, CE must be determined.

2. DEFINITIONS

2.1 Natural Draft Opening (NDO) -- Any permanent opening in the enclosure that remains open during operation of the facility and is not connected to a duct in which a fan is installed.

2.2 Permanent Total Enclosure (PTE) -- A permanently installed enclosure that completely surrounds a source of emissions such that all VOM emissions are captured and contained for discharge through a control device.

2.3 Temporary Total Enclosure (TTE) -- A temporarily installed enclosure that completely surrounds a source of emissions such that all VOM emissions are captured and contained for discharge through ducts that allow for the accurate measurement of VOM rates.

3. CRITERIA OF A TEMPORARY TOTAL ENCLOSURE

3.1 Any NDO shall be at least 4 equivalent opening diameters from each VOM emitting point.

3.2 Any exhaust point from the enclosure shall be at least 4 equivalent duct or hood diameters from each NDO.

3.3 The total area of all NDO's shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling.

3.4 The average facial velocity (FV) of air through all NDO's shall be at least 3,600 m/hr (200 fpm). The direction of air through all NDO's shall be into the enclosure.

3.5 All access doors and windows whose areas are not included in section 3.3 and are not included in the calculation in section 3.4 shall be closed during routine operation of the process.

4. CRITERIA OF A PERMANENT TOTAL ENCLOSURE

4.1 Same as sections 3.1 and 3.3 -3.5.

4.2 All VOM emissions must be captured and contained for discharge through a control device.

5. PROCEDURE

5.1 Determine the equivalent diameters of the NDO's and determine the distances from each VOM emitting point to all NDO's. Determine the equivalent diameter of each exhaust duct or hood and its distance to all NDO's. Calculate the distances in terms of equivalent diameters. The number of equivalent diameters shall be at least 4.

5.2 Measure the total area (A_t) of the enclosure and the total area (A_N) of all NDO's of the enclosure. Calculate the NDO to enclosure area ratio (NEAR) as follows:

$$NEAR = A_N/A_t$$

The NEAR must be ≤ 0.05.

5.3Measure the volumetric flow rate, corrected to standard conditions, of each gas stream exiting the enclosure through an exhaust duct or hood using EPA Method 2. In some cases (e.g., when the building is the enclosure), it may be necessary to measure the volumetric flow rate, corrected to standard conditions, of each gas stream entering the enclosure through a forced makeup air duct using Method 2. Calculate FV using the following equation:

$$FV = [Q_O - Q_I] /A_N$$

where:

Q_O = the sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood.

Q_I = the sum of the volumetric flow from all gas streams into the enclosure through a forced makeup air duct; zero, if there is no forced makeup air into the enclosure.

A_N = total area of all NDO's in enclosure.

The FV shall be at least 3,600 m/hr (200 fpm).

5.4 Verify that the direction of air flow through all NDO's is inward. Use streamers, smoke tubes, tracer gases, etc. Strips of plastic wrapping film have been found to be effective. Monitor the direction of air flow at intervals of at least 10 minutes for at least 1 hour.

6. QUALITY ASSURANCE

6.1 The success of this protocol lies in designing the TTE to simulate the conditions that exist without the TTE, i.e., the effect of the TTE on the normal flow patterns around the affected facility or the amount of fugitive VOM emissions should be minimal. The TTE must enclose the application stations, coating reservoirs, and all areas from the application station to the oven. The oven does not have to be enclosed if it is under negative pressure. The NDO's of the temporary enclosure and a fugitive exhaust fan must be properly sized and placed.

6.2 Estimate the ventilation rate of the TTE that best simulates the conditions that exist without the TTE, i.e., the effect of the TTE on the normal flow patterns around the affected facility or the amount of fugitive VOM emissions should be minimal. Figure 1 may be used as an aid. Measure the concentration (C_G) and flow rate (Q_G) of the captured gas stream, specify a safe concentration (C_F) for the fugitive gas stream, estimate the CE, and then use the plot in Figure 1 to determine the volumetric flowrate of the fugitive gas stream (Q_F). A fugitive VOM emission exhaust fan that has a variable flow control is desirable.

6.2.1 Monitor the concentration of VOM into the capture device without the TTE. To minimize the effect of temporal variation on the captured emissions, the baseline measurement should be made over as long a time period as practical. However, the process conditions must be the same for the measurement in section 6.2.3 as they are for this baseline measurement. This may require short measuring times for this quality control check before and after the construction of the TTE.

6.2.2 After the TTE is constructed, monitor the VOM concentration inside the TTE. This concentration shall continue to increase and must not exceed the safe level according to OSHA requirements for permissible exposure limits. An increase in VOM concentration indicates poor TTE design or poor capture efficiency.

6.2.3Monitor the concentration of VOM into the capture device with the TTE. To limit the effect of the TTE on the process, the VOM concentration with and without the TTE must be within ±10 percent. If the measurements do not agree, adjust the ventilation rate from the TTE until they agree within 10 percent.

(Source: Amended at 17 Ill. Reg. 16636, effective September 27, 1993)

Section 219.APPENDIX C Reference Test Methods for Air Oxidation Processes

Introduction

This Appendix presents the reference methods and procedures required for implementing Reasonably Available Control Technology (RACT). Methods and procedures are identified for two types of RACT implementation:

a) Determination of YOM destruction efficiency for evaluating compliance with the 98 weight percent YOM reduction or 20 ppmv emission limit specified in Sections 215.520 through 215.527; and

b) Determination of offgas flowrate, hourly emissions and stream net heating value for calculating TRE.

All reference methods identified in this Appendix refer to the reference methods specified at 40 CFR 60, Appendix A, incorporated by reference in Section 215.105.

VOM DESTRUCTION EFFICIENCY DETERMINATION

The following reference methods and procedures are required for determining compliance with the percent destruction efficiency specified in Sections 215.520 through 215.527.

a) Reference Method 1 or 1A for selection of the sampling site. The control device inlet sampling site for determination of vent stream molar composition or total organic compound destruction efficiency shall be prior to the inlet of any control device and after all recovery devices.

b) Reference Methods 2, 2A, 2C or 2D for determination of the volumetric flowrate.

c) Reference Method 3 to measure oxygen concentration of the air dilution correction. The emission sample shall be corrected to 3 percent oxygen.

d) Reference Method 18 to determine the concentration of total organic compounds (minus methane and ethane) in the control device outlet and total organic compound reduction efficiency of the control device.

TRE DETERMINATION

The following reference methods and procedures are required for determining the offgas flowrate, hourly emissions, and the net heating value of .the gas combusted to calculate the vent stream TRE.

a) Reference Method l or lA for selection of the sampling site. The sampling site for the vent stream flowrate and molar composition determination prescribed in (b) and (c) shall be prior to the inlet of any combustion device, prior to any post-reactor dilution of the stream with air and prior to any post-reactor introduction of halogenated compounds into the vent stream. Subject to the preceding restrictions on the sampling site, it shall be after the final recovery device. If any gas stream other than the air oxidation vent stream is normally conducted through the recovery system of the affected facility, such stream shall be rerouted or turned off while the vent stream is sampled, but shall be routed normally prior to the measuring of the initial value of the monitored parameters for determining compliance with the recommended RACT. If the air oxidation vent stream is normally routed through any equipment which is not a part of the air oxidation process as defined in 35 Ill. Adm. Code 211.122, such equipment shall be bypassed by the vent stream while the vent stream is sampled, but shall not be bypassed during the measurement of the initial value of the monitored parameters for determining compliance with Subpart Y.

b) The molar composition of the vent stream shall be determined using the following methods:

  1) Reference Method 18 to measure the concentration of all organics, including those containing halogens, unless a significant portion of the compounds of interest are polymeric (high molecular weight), can polymerize before analysis or have low vapor pressures, in which case Reference Method 25(a) shall be used.

2) ASTM D1946-67 (reapproved 1977), incorporated by reference in Section 215.105, to measure the concentration of carbon monoxide and hydrogen.

3) Reference Method 4 to measure the content of water vapor, if necessary.

c) The volumetric flowrate shall be determined using Reference Method 2, 2A, 2C or 2D, as appropriate.

d) The net heating value of the vent stream shall be calculated using the following equation:

$$H = K \sum_{i=1}^{n} C_i H_i$$

Where:

H = Net heating value of the sample, MJ/scm, where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C, as in the definition of F (vent stream flowrate) below.

K = Constant, 1.740×10^{-7} (1/ppm) (mole/scm) (MJ/kcal) where standard temperature for mole/scm is 20°C.

Ci = Concentration of sample component i, reported on a wet basis, in ppm, as measured by Reference Method 18 or ASTM D1946-67 (reapproved 1977), incorporated by reference in Section 215.105.

Hi = Net heat of combustion of sample component i, kcal/mole based on combustion at 25°C and 760 mm Hg. If published values are not available or cannot be calculated, the heats of combustion of vent stream components are required to be determined using ASTM D2382-76, incorporated by reference in Section 215.105.

e) The emission rate of total organic compounds in the process vent stream shall be calculated using the following equation:

$$E = K \quad F \; \underset{i=1}{\overset{n}{\text{I:}}} \; CiMi$$

Where:

E = Emission rate of total organic compounds (minus methane and ethane) in the sample in kg/hr;

K = Constant 2.494×10^{-6} (1/ppm) (mole/scm) (kg/g) (min/hr), where standard temperature for (mole/scm) is 20°C;

Mi = Molecular weight of sample component i (g/mole);

F = Vent stream flowrate (scm/min), at a standard temperature of 20°C.

f) The total vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Reference Method 18.

(Source: Amended at 17 Ill. Reg. 16636, effective September 27, 1993)

Section 219.Appendix D: Coefficients for the Total Resource Effectiveness Index (TRE) Equation

This Appendix contains values for the total resource effectiveness index (TRE) equation in Subpart V.

If a flow rate falls exactly on the boundary between the indicated ranges, the operator shall use the row in which the flow rate is maximum.

COEFFICIENTS FOR TRE EQUATION FOR CHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE LESS THAN OR EQUAL TO 3.5 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.0.	13.5	48.73	0.	0.404	-0.1632	0.	0.
13.5	700.	42.35	0.624	0.404	-0.1632	0.	0.0245
700.	1400.	84.38	0.678	0.404	-0.1632	0.	0.0346
1400.	2100.	126.41	0.712	0.404	-0.1632	0.	0.0424
2100.	2800.	168.44	0.747	0.404	-0.1632	0.	0.0490
2800.	3500.	210.47	0.758	0.404	-0.1632	0.	0.0548

COEFFICIENTS FOR TRE EQUATION FOR CHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 3.5 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.	13.5	47.76	0.	-0.292	0.	0.	0.
13.5	700.	41.58	0.605	-0.292	0.	0.	0.0245
700.	1400.	82.84	0.658	-0.292	0.	0.	0.0346
1400.	2100.	123.10	0.691	-0.292	0.	0.	0.0424
2100.	2800.	165.36	0.715	-0.292	0.	0.	0.0490
2800.	3500.	206.62	0.734	-0.292	0.	0.	0.0548

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE LESS THAN OR EQUAL TO 0.48 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.	13.5	19.05	0.	0.113	-0.214	0.	0.
13.5	1350.	16.61	0.239	0.113	-0.214	0.	0.0245
1350.	2700.	32.91	0.260	0.113	-0.214	0.	0.0346
2700.	4050.	49.21	0.273	0.113	-0.214	0.	0.0424

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 0.48 AND LESS THAN OR EQUAL TO 1.9 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.	13.5	19.74	0.	0.400	-0.202	0.	0.
13.5	1350.	18.30	0.138	0.400	-0.202	0.	0.0245
1350.	2700.	36.28	0.150	0.400	-0.202	0.	0.0346
2700.	4050.	54.26	0.158	0.400	-0.202	0.	0.0424

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 1.9 AND LESS THAN OR EQUAL TO 3.6 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
.0	13.5	15.24	0.	0.033	0.	0.	0.
13.5	1190.	13.63	0.157	0.033	0.	0.	0.0245
1190.	2380.	26.95	0.171	0.033	0.	0.	0.346
2380.	3570.	40.27	0.179	0.033	0.	0.	0.0424

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 3.6 MG/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.	13.5	15.24	0.	0.	0.0090	0.	0.

13.5	1190.	13.63	0.	0.	0.0090	0.0503	0.0245
1190.	2380.	26.95	0.	0.	0.0090	0.0546	0.0346
2380.	3570.	40.27	0.	0.	0.0090	0.0573	0.0424

(Source: Amended at 17 Ill. Reg. 16918, effective September 27, 1993)

Section 219.Appendix E List of Affected Marine Terminals

The following table identifies the expected volatile organic material (VOM) emission reductions, in pounds per day in 1996, from the control of the marine vessel loading of gasoline and crude oil from the listed sources, their successors, and assigns. Such reduction of VOM emissions must occur after November 1990 and may not include reductions resulting from compliance with any federally required controls or from any measures included in any State Implementation Plan adopted by the State of Illinois to satisfy any other Clean Air Act requirement.

Facility	Permit#	Reduction
Phillips Pipeline Co. Facility ID # 163020AAB	73040515014	10
Clark Oil and Refining Corp. Facility ID # 19050AAA	72110678053	468
Marathon Pipe Line Co. Facility ID # 119050AAF	73021451001	2,417
Conoco Pipe Line Co. Facility ID # 119050AAK	73031095011	2,759
Shell Oil Co. Facility ID # 119090AAA	87120058128	7,554
Amoco Distribution Center Facility ID # 119115AAY	73020080007	10,443

(Source: Added at 20 Ill. Reg. 3848, effective February 15, 1996)

Section 219.Appendix G TRE Index Measurements for SOCMI Reactors and Distillation Units

For purposes of Subpart Q, Sections 219.431 through 219.435, the following apply:

a) The following test methods shall be used to determine compliance with the total resource effectiveness ("TRE") index value:

   1) Method 1 or 1A, incorporated by reference at Section 219.112 of this Part, as appropriate, for selection of the sampling site.

A) The sampling site for the vent stream molar composition determination and flow rate prescribed in subsections (a)(2) and (a)(3) of this Appendix shall be, except for the situations outlined in subsection (a)(1)(B), after the final recovery device, if a recovery system is present, prior to the inlet of any control device, and prior to any post reactor or post-distillation unit introduction of halogenated compounds into the vent stream. No traverse site selection method is needed for vents smaller than 10 em in diameter.

B) If any gas stream other than the reactor or distillation unit vent stream is normally conducted through the final recovery device:

i) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which any nonreactor or nondistillation unit vent stream or stream from a nonaffected reactor or distillation unit is introduced. Method 18 incorporated by reference at Section 219.112 of this Part, shall be used to measure organic compound concentrations at this site.

ii) The efficiency of the final recovery device is determined by measuring the organic compound concentrations using Method 18, incorporated by reference at Section 219.112 of this Part, at the inlet to the final recovery device after the introduction of all vent streams and at the outlet of the final recovery device.

iii) The efficiency of the final recovery device determined according to subsection (a)(l)(B)(ii) of this Appendix shall be applied to the organic compound concentrations measured according to subsection (a)(1)(B)(i) of this Appendix to determine the concentrations of organic compounds from the final recovery device attributable to the reactor or distillation unit vent stream. The resulting organic compound concentrations are then used to perform the calculations outlined in subsection (a)(4) of this Appendix.

2) The molar composition of the vent stream shall be determined as follows:

A) Method 18, incorporated by reference at Section 219.112 of this Part, to measure the concentration of organic compounds including those containing halogens;

B) ASTM 01946-77, incorporated by reference at Section 219.112 of this Part, to measure the concentration of carbon monoxide and hydrogen; and

C) Method 4, incorporated by reference at Section 219.112 of this Part, to measure the content of water vapor.

3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, incorporated by reference at Section 219.112 of this Part, as appropriate.

4) The emission rate of VOM (minus methane and ethane) (E_{VOM}) in the vent stream shall be calculated using the following formula:

$$E_{VOM} = K_2 \sum_{j=1}^{n} C_j M_j Q_s$$

where:

E_{VOM} = Emission rate of VOM (minus methane and ethane) in the sample, kg/hr.

K_2 = Constant, 2.494×10^{-6} (l/ppmv) (g-mole/scm) (kg/g)(min/hr), where standard temperature for (g-mole/scm) is 20°C.

C_j = Concentration of compound j, on a dry basis, in ppmv as measured by Method 18, incorporated by reference at Section 219.112 of this Part, as indicated in Section 219.433 (c) (3) of this Part.

M_j = Molecular weight of sample j, g/g-mole.

Q_s = Vent stream flow rate (scm) at a temperature of 20°C.

5) The total vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18, incorporated by reference at Section 219.112 of this Part.

6) The net heating value of the vent stream shall be calculated using the following:

$$H_T = K_1 \sum_{j=1}^{n} C_j H_j (1 - B_{ws})$$

where:

HT = Net heating value of the sample (MJ/scm), where the net enthaply per mole of vent stream is based on combustion of 25°C and 760 mmHG, but the standard temperature for determining the volume corresponding to one mole is 25°C, as in the definition of Q, (vent stream flow rate).

Kl = Constant, 1.740×10^{-7} $(\text{ppmv})^{-1}$ (g-mole/scm), (MJ/KCal), where standard temperature for (g-mole/scm) is 20°C.

B_{ws} = Water vapor content of the vent stream, proportion by volume; except that if the vent stream passes through a final stream jet and is not condensed, it shall be assumed that $B_{ws} = 0.023$ in order to correct to 2.3 percent moisture.

Ci = Concentration on a dry basis of compound j in ppmv, as measured for all organic compounds by Method 18, incorporated by reference at Section 219.112 of this Part, and measured for hydrogen and carbon monoxide by using ASTM D1946-77, incorporated by reference at Section 219.112 of this Part.

H_j = Net heat of combustion of compound j, kCal/g-mole, based on combustion at 25°C and 760 mmHG. The heats of combustion of vent stream components shall be determined using ASTM D2382-83, incorporated by reference at Section 219.112 of this Part, if published values are not available or cannot be calculated.

b)

1) The TRE index value of the vent shall be calculated using the following

$$TRE = \frac{1\,[a + b\,(Q_s) + c\,(H_T) + d\,(E_{VOM})]}{E_{VOM}}$$

where:

TRE = TRE index value.

E_{VOM} = Hourly emission rate of VOM (kg/hr) as calculated in subsection (a)(4) of this Appendix.

Q_S = Vent stream flow rate scm/min at a standard temperature of 20°C.

H_T = Vent stream net heating value (MJ/scm), as calculated in subsection (a)(6) of this Appendix.

E_{VOM} = Hourly emission rate of VOM (minus methane and ethane), (kg/hr) as calculated in subsection (a)(4) of this Appendix.

a, b, c, d = Value of coefficients presented below are:

		Value of Coefficients			
Type of Stream	Control Device Basis	a	b	c	d
Nonhalogenated	Flare	2.129	0.183	-0.005	0.359
	Thermal incinerator zero (0) Percent heat Recovery	3.075	0.021	-0.037	0.018
	Thermal incinerator70 Percent heat Recovery	3.803	0.032	-0.042	0.007
Halogenated	Thermal incinerator and scrubber	5.470	0.181	-0.040	0.004

2) Every owner or operator of a vent stream shall use the applicable coefficients identified for values a, b, c, and din subsection (b)(l) of this Appendix to calculate the TRE index value based on a flare, a thermal incinerator with zero (0) percent heat recovery, and a thermal incinerator with 70 percent heat recovery, and shall select the lowest TRE index value.

3) Every owner or operator of a reactor or distillation unit with a halogenated vent stream, determined as any stream with a total concentration of halogen atoms contained in organic compounds of 200 ppmv or greater, shall use the applicable

4) coefficients identified for values a, b, c and d in subsection (b)(l) of this Appendix to calculate the TRE index value based on a thermal incinerator and scrubber.

c) Every owner or operator of a source seeking to comply with Section 219.432(b) of this Part shall recalculate the flow rate and VOM concentration for each affected vent stream whenever process changes are made. Examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The flow rate and VOM concentration shall be recalculated based on test data, or on best engineering estimates of the effects of the change to the recovery system.

d) Whenever a process change, as defined in Section 219.435(c) of this Subpart, yields a TRE index value of 1.0 or less, the owner or operator shall notify and submit a report to the Agency according to the requirements specified in Section 219.435(c) of this Subpart, within 180 calendar days after the process change and shall conduct a performance test according to the methods and procedures required by Section 219.433 of this Part.

e) For the purpose of demonstrating that a process vent stream has a VOM concentration below 500 ppmv, the following shall be used:

1) The sampling site shall be selected as specified in Section 219.433(c)(1) of this Part.

2) Method 18 or Method 25A of 40 CFR Part 60, Appendix A, incorporated by reference at Section 219.112 of this Part, shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of 40 CFR Part 63, Appendix A, incorporated by reference at Section 219.112 of this Part, may be used.

3) Where Method 18 is used, the following procedures shall be used to calculate ppmv concentration:

i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

ii) The concentration of VOM shall be calculated using Method 18 according to Section 219.433(c)(4) of this Part.

4) Where Method 25A is used, the following procedures shall be used to calculate ppmv VOM concentration:

i) Method 25A shall be used only if a single VOM is greater than 50 percent of total VOM, by volume, in the process vent stream.

ii) The vent stream composition may be determined by either process knowledge, test data collected using an appropriate Reference Method or a method of data collection validated according to the protocol in Method 301 of 40 CFR Part 63, Appendix A, incorporated by reference at Section 219.112 of this Part. Examples of information that constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current process vent stream conditions.

iii) The VOM used as the calibration gas for Method 25A shall be the single VOM present at greater than 50 percent of the total VOM by volume.

iv) The span value for Method 25A shall be 50 ppmv.

v) Use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

vi) The concentration of VOM shall be corrected to 3 percent oxygen using the procedures and equation in Section 219.433(c)(3) of this Part.

5) The owner or operator shall demonstrate that the concentration of VOM, including methane and ethane, measured by Method 25A is below 250 ppmv to qualify for the low concentration exclusion in Section 219.431 of this Part.

(Source: Added at 19 Ill. Reg. 6848, effective May 9, 1995)

Section 219.APPENDIX H Baseline VOM Content Limitations for Subpart F, Section 219.212 Cross-Line Averaging

This Appendix contains limitations for purposes of determining compliance with the requirements in Section 219.212 of this Part. A source must establish that, at very least, each participating coating line used for purposes of cross-line averaging meets the Federal Implementation Plan level of VOM content, as listed below. The emission limitations for participating coating lines that must not be exceeded are as follows:

		kg/1	lb/gal
a)	Automobile or Light-Duty Truck Coating		
1)	Prime coat	0.14	(1.2)
2)	Primer surface coat	1.81	(15.1)

(Note: The primer surface coat limitation is in units of kg (lbs) of VOM per I(gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire primer surface operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b) and the recordkeeping and reporting requirements specified in Section 219.2ll(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 does not apply to the primer surface limitation.)

		kg/1	lb/gal
3)	Topcoat	1.81	(15.1)

(Note: The topcoat limitation is in units of kg (lbs) of VOM per I (gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire topcoat operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b) of this Part and the recordkeeping and reporting requirements specified in Section 219.2ll(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 of this Part does not apply to the topcoat limitation.)

		kg/1	lb/gal
4)	Final repair coat	0.58	(4.8)

		kg/1	lb/gal
b)	Can Coating		
1)	Sheet basecoat and overvarnish	0.34	(2.8)
2)	Exterior basecoat and overvarnish	0.34	(2.8)
3)	Interior body spray coat	0.51	(4.2)
4)	Exterior end coat	0.51	(4.2)
5)	Side seam spray coat	0.66	(5.5)
6)	End sealing compound coat	0.44	(3.7)

		kg/1	lb/gal
c)	Paper Coating	0.35	(2.9)

(Note: The paper coating limitation shall not apply to any owner or operator of any paper coating line on which printing is performed if the paper coating line complies with the emissions limitations in Subpart H: Printing and Publishing, Section 219.401 of this Part.)

		kg/1	lb/gal
d)	Coil Coating	0.31	(2.6)
e)	Fabric Coating	0.35	(2.9)
f)	Vinyl Coating	0.45	(3.8)
g)	Metal Furniture Coating		
1)	Air Dried	0.36	(3.0)
2)	Baked	0.36	(3.0)

h)	Large Appliance Coating		
1)	Air Dried	0.34	(2.8)
2)	Baked	0.34	(2.8)

(Note: The limitation shall not apply to the use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 I (1 quart) in any one rolling eight-hour period.)

		kg/1	lb/gal
i)	Magnet Wire Coating	0.20	(1.7)
j)	Miscellaneous Metal Parts and Products Coating	kg/l	lb/gal
1)	Clear coating	0.52	(4.3)
2)	Extreme performance coating		
A)	Air Dried	0.42	(3.5)
B)	Baked	0.42	(3.5)
3)	Steel pail and drum interior coating	0.52	(4.3)
4)	All other coatings		
A)	Air Dried	0.42	(3.5)
B)	Baked	0.36	(3.0)
k)	Heavy Off-Highway Vehicle Products Coating	kg/l	lb/gal
1)	Extreme performance prime coat	0.42	(3.5)
2)	Extreme performance top- coat (air dried)	0.42	(3.5)
3)	Final repair coat (air dried)	0.42	(3.5)
4)	All other coatings are subject to the emission limitations for miscellaneous metal parts and products coatings in subsection (j) above.		
l)	Wood Furniture Coating	kg /l	lb/gal
1)	Clear topcoat	0.67	(5.6)
2)	Opaque stain	0.56	(4.7)
3)	Pigmented coat	0.60	(5.0)
4)	Repair coat	0.67	(5.6)
5)	Sealer	0.67	(5.6)
6)	Semi-transparent stain	0.79	(6.6)
7)	Wash coat	0.73	(6.1)

(Note: An owner or operator of a wood furniture coating operation subject to this Section shall apply all coatings, with the exception of no more than 37.8 I (10 gal) of coating per day used for touch-up and repair operations, using one or more of the following application systems: airless spray application system, air-assisted airless spray application system, electrostatic spray application system, electrostatic bell or disc spray application system, heated airless spray application system, roller coating, brush or wipe coating application system, dip coating application system or high volume low pressure (HVLP) application system.)

		kg/1	lb/gal
m)	Existing Diesel-Electric Locomotive Coating Lines in Cook County		
1)	Extreme performance prime coat	0.42	(3.5)
2)	Extreme performance topcoat (air dried)	0.42	(3.5)
3)	Final repair coat (air dried)	0.42	(3.5)
4)	High-temperature aluminum coating	0.72	(6.0)
5)	All other coatings	0.36	(3.0)

		kg/1	lb/gal
n)	Plastic Parts Coating: Automotive/Transportation		
1)	Interiors		
A)	Baked		
i)	Color coat	0.49	(4.1)
ii)	Primer	0.46	(3.8)
B)	Air Dried		
i)	Color coat	0.38	(3.2)
ii)	Primer	0.42	(3.5)
2)	Exteriors (flexible and non-flexible)		
A)	Baked		
i)	Primer	0.60	(5.0)
ii)	Primer non-flexible	0.54	(4.5)
iii)	Clear coat	0.52	(4.3)
iv)	Color coat	0.55	(4.6)
B)	Air Dried		
i)	Primer	0.66	(5.5}
ii)	Clear coat	0.54	(4.5)
iii)	Color coat (red & balck)	0.67	(5.6)
iv)	Color coat (other)	0.61	(5.1)
3)	Specialty		
A)	Vacuum metallizing basecoats, texture basecoats	0.66	(5.5)

		B)	Black coatings, reflective argent coatings, air bag cover coatings, and soft coatings	0.71	(5.9)
		C)	Gloss reducers, vacuum metallizing topcoats, and texture topcoats	0.77	(6.4)
		D)	Stencil coatings, adhesion primers, ink pad coatings, electrostatic prep coatings, and resist coatings	0.82	(6.8)
		E)	Head lamp lens coatings	0.89	(7.4)
o)			Plastic Parts Coating: Business Machine	kg/1	lb/gal
	1)		Primer	0.14	(1.2)
	2)		Color coat (non-texture coat)	0.28	(2.3)
	3)		Color coat (texture coat)	0.28	(2.3)
	4)		Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings	0.48	(4.0)
	5)		Specialty Coatings		
		A)	Soft coat	0.52	(4.3)
		B)	Plating resist	0.71	(5.9)
		C)	Plating sensitizer	0.85	(7.1)*

(Source: Added at 19 Ill. Reg. 6848, effective May 9, 1995)