ILLINOIS POLLUTION CONTROL BOARD
November 18, 1994

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| IN THE MATTER OF: | ) | |
| | ) | |
| 15% ROP PLAN CONTROL MEASURES | ) | |
| FOR VOM EMISSIONS - PART VII: | ) | R94-33 |
| BATCH OPERATIONS: | ) | (Rulemaking) |
| AMENDMENTS TO 35 ILL. ADM. | ) | |
| CODE PARTS 211, 218 AND 219 | ) | |

Proposed Rule. First Notice.

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

On November 14, 1994, the Illinois Environmental Protection Agency (Agency) filed this proposal for rulemaking. The proposal represents one part of Illinois' submittal of a complete state implementation plan (SIP). Section 182(b)(1) of the Clean Air Act (42 U.S.C. 7511(b)(1)) requires all moderate and above ozone nonattainment areas to achieve a 15% reduction of 1990 emissions of volatile organic material (VOM) by 1996. The Chicago and Metro-East St. Louis areas are classified as "Severe" and "Moderate" nonattainment for ozone, respectively, and are subject to the 15% reduction requirement. This proposal represents Part VII of the rulemakings anticipated in the 15% Rate of Progress Plan ("15% ROP Plan"). The proposal seeks to amend 35 Ill. Adm. Code 211, 218 and 219.

The proposed rulemaking would control VOM emissions from chemical processes operating in a batch mode. The proposed amendments to Subpart V are intended to cover all batch operations at sources identified by standard industrial classification codes, as defined in the 1987 edition of the Standard Industrial Classification Manual, which manufacture as a primary product or intermediate, any chemical identified by the following: plastic materials and resins (SIC 2821), pharmaceutical preparations (2834), medicinal chemicals and botanical production (SIC 2833), gum and wood chemicals (SIC 2861), cyclic crudes and intermediates (SIC 2865), industrial organic chemicals (SIC 2869) and agricultural chemicals (SIC 2879). The rulemaking is proposed for process vents associated with batch or non-continuous chemical manufacturing operations.

Batch operations in the Chicago and Metro-East ozone nonattainment areas, as defined in 35 Ill. Adm. Code Parts 218 and 219, Sections 218.103 and 219.103, are subject to this rulemaking. All process vents associated with batch operations at Stepan Company's Millsdale manufacturing facility, Elwood, Illinois, are also subject to the proposal.

Today the Board acts to send this proposal to first notice under the Illinois Administrative Procedure Act, but without commenting on the merits of the proposal.

This proposal was filed pursuant to Section 28.5 of the Environmental Protection Act (Act) as a fast-track rulemaking proceeding. (415 ILCS 5/28.5 (1992).) Section 28.5 requires the Board to proceed with rulemaking under set time-frames. The Board has no discretion to adjust these time frames under any circumstances. The following schedule indicates the deadlines by which the Board must act, as provided in Section 28.5:

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|---|---|
| first notice | on or before November 29, 1994 |
| first hearing | on or before January 8, 1995 |
| second hearing | no later than 30 days after the start of the first hearing |
| third hearing | no later than 14 days after the start of the second hearing |
| second notice | |
| (if third hearing cancelled) | on or before March 24, 1995 |
| (if third hearing held) | on or before April 13, 1995 |
| final adoption and filing | 21 days after receipt of JCAR certificate of no objection |

The Board notes that the above dates are the deadlines as established by Section 28.5 and do not represent actual hearing dates or filing dates. While the schedule includes second and third hearings, these hearings may be cancelled if unnecessary. The Board will proceed in this matter as prescribed in Section 28.5 and discussed in the Board's resolution. (See Clean Air Act Rulemaking Procedures Pursuant to Section 28.5 of the Environmental Protection Act, as Added By P.A. 87-1213, (October 29, 1992 and December 3, 1992), RES 92-2.)

The Agency has filed a motion for waiver of requirements with the proposal. The Agency requests waiver of the following requirements: that the Agency submit the original and nine copies of the entire regulatory proposal; that the Agency submit an entire copy of the proposal to the Attorney General and the Department of Energy and Natural Resources (DENR); and that the Agency submit copies of all documents upon which it relied. The Agency asks that it be permitted to file an original plus five complete copies of the proposal and four partial copies. A partial copy includes the pleadings and the proposed rules, but does not include the supporting exhibits. The Attorney General and DENR have agreed with the Agency that a copy of the proposal need not be served upon them. The Agency has provided the Board with one copy of some of the documents on which it relied, and notes that the other documents are readily accessible or already in the Board's possession. The Board grants the Agency's motion.

ORDER

The Board directs the Clerk to cause publication of the following amendments in the Illinois Register for first notice:

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

PART 211
DEFINITIONS AND GENERAL PROVISIONS

SUBPART A: GENERAL PROVISIONS

Section
211.101 Incorporation by Reference
211.102 Abbreviations and Conversion Factors

SUBPART B: DEFINITIONS

Section
211.121 Other Definitions
211.122 Definitions (Repealed)
211.130 Accelacota
211.150 Accumulator
211.170 Acid Gases
211.210 Actual Heat Input
211.230 Adhesive
211.250 Aeration
211.270 Aerosol Can Filling Line
211.290 Afterburner
211.310 Air Contaminant
211.330 Air Dried Coatings
211.350 Air Oxidation Process
211.370 Air Pollutant
211.390 Air Pollution
211.410 Air Pollution Control Equipment
211.430 Air Suspension Coater/Dryer
211.450 Airless Spray
211.470 Air Assisted Airless Spray
211.490 Annual Grain Through-Put
211.510 Application Area
211.530 Architectural Coating
211.550 As Applied
211.560 As-Applied Fountain Solution
211.570 Asphalt
211.590 Asphalt Prime Coat
211.610 Automobile
211.630 Automobile or Light-Duty Truck Assembly Source or Automobile or Light-Duty Truck Manufacturing Plant

211.2710 Grain-Handling Operation
211.2730 Green-Tire Spraying
211.2750 Green Tires
211.2770 Gross Heating Value
211.2790 Gross Vehicle Weight Rating
211.2810 Heated Airless Spray
211.2830 Heatset
211.2850 Heatset Web Offset Lithographic Printing Line
211.2870 Heavy Liquid
211.2890 Heavy Metals
211.2910 Heavy Off-Highway Vehicle Products
211.2930 Heavy Off-Highway Vehicle Products Coating
211.2950 Heavy Off-Highway Vehicle Products Coating Line
211.2970 High Temperature Aluminum Coating
211.2990 High Volume Low Pressure (HVLP) Spray
211.3010 Hood
211.3030 Hot Well
211.3050 Housekeeping Practices
211.3070 Incinerator
211.3090 Indirect Heat Transfer
211.3110 Ink
211.3130 In-Process Tank
211.3150 In-Situ Sampling Systems
211.3170 Interior Body Spray Coat
211.3190 Internal-Floating Roof
211.3210 Internal Transferring Area
211.3230 Lacquers
211.3250 Large Appliance
211.3270 Large Appliance Coating
211.3290 Large Appliance Coating Line
211.3310 Light Liquid
211.3330 Light-Duty Truck
211.3350 Light Oil
211.3370 Liquid/Gas Method
211.3390 Liquid-Mounted Seal
211.3410 Liquid Service
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211.3450 Lithographic Printing Line
211.3470 Load-Out Area
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211.3490 Low Solvent Coating
211.3500 Lubricating Oil
211.3510 Magnet Wire
211.3530 Magnet Wire Coating
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211.3570 Major Dump Pit
211.3590 Major Metropolitan Area (MMA)
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211.3620 Manually Operated Equipment
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211.3650 Marine Terminal
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211.3670 Material Recovery Section
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211.3710 Metal Furniture
211.3730 Metal Furniture Coating
211.3750 Metal Furniture Coating Line
211.3770 Metallic Shoe-Type Seal
211.3790 Miscellaneous Fabricated Product Manufacturing Process
211.3810 Miscellaneous Formulation Manufacturing Process
211.3830 Miscellaneous Metal Parts and Products
211.3850 Miscellaneous Metal Parts and Products Coating
211.3870 Miscellaneous Metal Parts or Products Coating Line
211.3890 Miscellaneous Organic Chemical Manufacturing Process
211.3910 Mixing Operation
211.3930 Monitor
211.3950 Monomer
211.3970 Multiple Package Coating
211.3990 New Grain-Drying Operation
211.4010 New Grain-Handling Operation
211.4030 No Detectable Volatile Organic Material Emissions
211.4050 Non-contact Process Water Cooling Tower
211.4070 Offset
211.4090 One Hundred Percent Acid
211.4110 One-Turn Storage Space
211.4130 Opacity
211.4150 Opaque Stains
211.4170 Open Top Vapor Degreasing
211.4190 Open-Ended Valve
211.4210 Operator of a Gasoline Dispensing Operation or Operator of a Gasoline Dispensing Facility
211.4230 Organic Compound
211.4250 Organic Material and Organic Materials
211.4260 Organic Solvent
211.4270 Organic Vapor
211.4290 Oven
211.4310 Overall Control
211.4330 Overvarnish
211.4350 Owner of a Gasoline Dispensing Operation or Owner of a Gasoline Dispensing Facility
211.4370 Owner or Operator
211.4390 Packaging Rotogravure Printing
211.4410 Packaging Rotogravure Printing Line
211.4430 Pail
211.4450 Paint Manufacturing Source or Paint Manufacturing Plant
211.4470 Paper Coating
211.4490 Paper Coating Line
211.4510 Particulate Matter
211.4530 Parts Per Million (Volume) or PPM (Vol)
211.4550 Person
211.4590 Petroleum
211.4610 Petroleum Liquid
211.4630 Petroleum Refinery
211.4650 Pharmaceutical

211.4670 Pharmaceutical Coating Operation
211.4690 Photochemically Reactive Material
211.4710 Pigmented Coatings
211.4730 Plant
211.4750 Plasticizers
211.4770 PM-10
211.4790 Pneumatic Rubber Tire Manufacture
211.4810 Polybasic Organic Acid Partial Oxidation Manufacturing Process
211.4830 Polyester Resin Material(s)
211.4850 Polyester Resin Products Manufacturing Process
211.4870 Polystyrene Plant
211.4890 Polystyrene Resin
211.4910 Portable Grain-Handling Equipment
211.4930 Portland Cement Manufacturing Process Emission Source
211.4950 Portland Cement Process or Portland Cement Manufacturing Plant
211.4970 Potential to Emit
211.4990 Power Driven Fastener Coating
211.5030 Pressure Release
211.5050 Pressure Tank
211.5060 Pressure/Vacuum Relief Valve
211.5070 Prime Coat
211.5090 Primer Surfacer Coat
211.5110 Primer Surfacer Operation
211.5130 Primers
211.5150 Printing
211.5170 Printing Line
211.5185 Process Emission Source
211.5190 Process Emission Unit
211.5210 Process Unit
211.5230 Process Unit Shutdown
211.5245 Process Vent
211.5250 Process Weight Rate
211.5270 Production Equipment Exhaust System
211.5310 Publication Rotogravure Printing Line
211.5330 Purged Process Fluid
211.5340 Rated Heat Input Capacity
211.5350 Reactor
211.5370 Reasonably Available Control Technology (RACT)
211.5390 Reclamation System
211.5410 Refiner
211.5430 Refinery Fuel Gas
211.5450 Refinery Fuel Gas System
211.5470 Refinery Unit or Refinery Process Unit
211.5490 Refrigerated Condenser
211.5500 Regulated Air Pollutant
211.5510 Reid Vapor Pressure
211.5530 Repair
211.5550 Repair Coat
211.5570 Repaired
211.5590 Residual Fuel Oil

211.5610 Restricted Area
211.5630 Retail Outlet
211.5650 Ringelmann Chart
211.5670 Roadway
211.5690 Roll Coater
211.5710 Roll Coating
211.5730 Roll Printer
211.5750 Roll Printing
211.5770 Rotogravure Printing
211.5790 Rotogravure Printing Line
211.5810 Safety Relief Valve
211.5830 Sandblasting
211.5850 Sanding Sealers
211.5870 Screening
211.5890 Sealer
211.5910 Semi-Transparent Stains
211.5930 Sensor
211.5950 Set of Safety Relief Valves
211.5970 Sheet Basecoat
211.5990 Shotblasting
211.6010 Side-Seam Spray Coat
211.6025 Single Unit Operation
211.6030 Smoke
211.6050 Smokeless Flare
211.6070 Solvent
211.6090 Solvent Cleaning
211.6110 Solvent Recovery System
211.6130 Source
211.6150 Specialty High Gloss Catalyzed Coating
211.6170 Specialty Leather
211.6190 Specialty Soybean Crushing Source
211.6210 Splash Loading
211.6230 Stack
211.6250 Stain Coating
211.6270 Standard Conditions
211.6290 Standard Cubic Foot (scf)
211.6310 Start-Up
211.6330 Stationary Emission Source
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211.6355 Stationary Gas Turbine
211.6360 Stationary Reciprocating Internal Combustion Engine
211.6370 Stationary Source
211.6390 Stationary Storage Tank
211.6410 Storage Tank or Storage Vessel
211.6430 Styrene Devolatilizer Unit
211.6450 Styrene Recovery Unit
211.6470 Submerged Loading Pipe
211.6490 Substrate
211.6510 Sulfuric Acid Mist
211.6530 Surface Condenser
211.6550 Synthetic Organic Chemical or Polymer Manufacturing Plant

AUTHORITY: Implementing Sections 9, 9.1 and 10 and authorized by Section 27 and 28.5 of the Environmental Protection Act ~~(Ill. Rev. Stat. 1991, ch. 111½, pars. 1009, 1009.1, 1010 and 1027), (P.A. 87-1213, effective September 26, 1992)~~ [415 ILCS 5/9, 9.1, 10, 27 and 28.5 (1992)].

SOURCE: Adopted as Chapter 2: Air Pollution, Rule 201:

Definitions, R71-23, 4 PCB 191, filed and effective April 14, 1972; amended in R74-2 and R75-5, 32 PCB 295, at 3 Ill. Reg. 5, p. 777, effective February 3, 1979; amended in R78-3 and 4, 35 PCB 75 and 243, at 3 Ill. Reg. 30, p. 124, effective July 28, 1979; amended in R80-5, at 7 Ill. Reg. 1244, effective January 21, 1983; codified at 7 Ill. Reg. 13590; amended in R82-1 (Docket A) at 10 Ill. Reg. 12624, effective July 7, 1986; amended in R85-21(A) at 11 Ill. Reg. 11747, effective June 29, 1987; amended in R86-34 at 11 Ill. Reg. 12267, effective July 10, 1987; amended in R86-39 at 11 Ill. Reg. 20804, effective December 14, 1987; amended in R82-14 and R86-37 at 12 Ill. Reg. 787, effective December 24, 1987; amended in R86-18 at 12 Ill. Reg. 7284, effective April 8, 1988; amended in R86-10 at 12 Ill. Reg. 7621, effective April 11, 1988; amended in R88-23 at 13 Ill. Reg. 10862, effective June 27, 1989; amended in R89-8 at 13 Ill. Reg. 17457, effective January 1, 1990; amended in R89-16(A) at 14 Ill. Reg. 9141, effective May 23, 1990; amended in R88-30(B) at 15 Ill. Reg. 5223, effective March 28, 1991; amended in R88-14 at 15 Ill. Reg. 7901, effective May 14, 1991; amended in R91-10 at 15 Ill. Reg. 15564, effective October 11, 1991; amended in R91-6 at 15 Ill. Reg. 15673, effective October 14, 1991; amended in R91-22 at 16 Ill. Reg. 7656, effective May 1, 1992; amended in R91-24 at 16 Ill. Reg. 13526, effective August 24, 1992; amended in R93-9 at 17 Ill. Reg. 16504, effective September 27, 1993; amended in R93-11 at 17 Ill. Reg. 21471, effective December 7, 1993; amended in R93-14 at 18 Ill. Reg. 1253, effective January 18, 1994; amended in R94-12 at 18 Ill. Reg. 14962, effective September 21, 1994; amended in R94-14 at 18 Ill. Reg. 15744, effective October 17, 1994; amended in R94-15 at 18 Ill. Reg. 16379, effective November 4, 1994; amended in R94-16 at 18 Ill. Reg._____, effective _____; amended in R94-33 at 18 Ill. Reg._____, effective _____.

SUBPART B: DEFINITIONS

Section 211.695 Batch Operation

"Batch operation" means, for purposes of 35 Ill. Adm. Code Parts 218 and 219, Sections 218.500 through 218.506 and 219.500 through 219.506, a noncontinuous operation in which a discrete quantity or batch of feed is charged into a chemical manufacturing process unit and distilled or reacted, or otherwise used at one time, and may include, but is not limited to, reactors, filters, dryers, distillation columns, extractors, crystallizers, blend tanks, neutralizer tanks, digesters, surge tanks and product separators. After each batch operation, the equipment is generally emptied before a fresh batch is started.

(Source: Added at _____ Ill. Reg. _____, effective _____ _____)

Section 211.696 Batch Process Train

"Batch process train" means, for purposes of 35 Ill. Adm. Code Parts 218 and 219, Sections 218.500 through 218.506 and 219.500 through 219.506, the collection of equipment (e.g., reactors, filters, dryers, distillation columns, extractors, crystallizers, blend tanks, neutralizer tanks, digesters, surge tanks and product separators) configured to produce a specific product or intermediate by a batch operation. A batch process train terminates at the point of storage or product handling of the product or intermediate being produced in the batch process train. Irrespective of the product being produced, a batch process train which is independent of other processes shall be considered a single batch process train for purposes of 35 Ill. Adm. Code Parts 218 and 219.

(Source: Added at _____ Ill. Reg. _____, effective _____ _____)

Section 211.5245 Process Vent

"Process vent" means, for purposes of 35 Ill. Adm. Code Parts 218 and 219, Sections 218.500 through 218.506 and 219.500 through 219.506, any non-fugitive source of VOM emissions to the atmosphere resulting from non-combustion emission units. A process vent begins at the inlet to the control device, or in the absence of a control device, at the point of discharge to the atmosphere. This includes all emission units vents and stacks. Not included in this definition are exhaust streams from exhaust hoods and building ventilation fans which are sued to provide ventilation for workers and not to collect and discharge emissions from specific emission units.

(Source: Added at _____ Ill. Reg. _____, effective _____ _____)

Section 211.6025 Single Unit Operation

"Single unit operation" means, for purposes of 35 Ill. Adm. Code Parts 218 and 219, Sections 218.500 through 218.506 and 219.500 through 219.506, a distinct piece of equipment in a batch operation within which one or more discrete processing steps occur. Such discrete processing steps include, but are not limited to, the preparation of reactants, facilitation of reactions, separation and purification of products or intermediates, and recycling of materials.

(Source: Added at _____ Ill. Reg. _____, effective _____ _____)

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

# PART 218
# ORGANIC MATERIAL EMISSION STANDARDS AND LIMITATIONS FOR THE CHICAGO AREA

## SUBPART A: GENERAL PROVISIONS

Section


## SUBPART B: ORGANIC EMISSIONS FROM STORAGE AND LOADING OPERATIONS

Section


## SUBPART C: ORGANIC EMISSIONS FROM MISCELLANEOUS EQUIPMENT

Section

SUBPART E: SOLVENT CLEANING



SUBPART F: COATING OPERATIONS



SUBPART G: USE OF ORGANIC MATERIAL



SUBPART H: PRINTING AND PUBLISHING



SUBPART Q: LEAKS FROM SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING PLANT

SUBPART R: PETROLEUM REFINING AND RELATED INDUSTRIES; ASPHALT MATERIALS



SUBPART S: RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS



SUBPART T: PHARMACEUTICAL MANUFACTURING



SUBPART V: BATCH OPERATIONS AND AIR OXIDATION PROCESSES

SUBPART W: AGRICULTURE



SUBPART X: CONSTRUCTION



SUBPART Y: GASOLINE DISTRIBUTION



SUBPART Z: DRY CLEANERS

SUBPART AA: PAINT AND INK MANUFACTURING



SUBPART BB: POLYSTYRENE PLANTS



SUBPART CC: POLYESTER RESIN PRODUCT MANUFACTURING PROCESS



SUBPART DD: AEROSOL CAN FILLING



SUBPART GG: MARINE TERMINALS

SUBPART PP: MISCELLANEOUS FABRICATED PRODUCT MANUFACTURING PROCESSES



SUBPART QQ: MISCELLANEOUS FORMULATION MANUFACTURING PROCESSES



SUBPART RR: MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING PROCESSES



SUBPART TT: OTHER EMISSION UNITS



SUBPART UU: RECORDKEEPING AND REPORTING

Section 218.Appendix B: VOM Measurement Techniques for Capture Efficiency
Section 218.Appendix C: Reference Test Methods for Air Oxidation Processes
Section 218.Appendix D: Coefficients for the Total Resource Effectiveness Index (TRE) Equation
Section 218.Appendix E: List of Affected Marine Terminals

AUTHORITY: Implementing Section 10 and authorized by Section 28.5 of the Environmental Protection Act (Ill. Rev. Stat. 1991, ch. 111½, par. 1010) (P.A. 87-1213, effective September 26, 1992) [415 ILCS 5/10 and 28.5].

SOURCE: Adopted at R91-7 at 15 Ill. Reg. 12231, effective August 16, 1991; amended in R91-23 at 16 Ill. Reg. 13564, effective August 24, 1992; amended in R91-28 and R91-30 at 16 Ill. Reg. 13864, effective August 24, 1992; amended in R93-9 at 17 Ill. Reg. 16636, effective September 27, 1993; amended in R93-14 at 18 Ill. Reg. at 1945, effective January 24, 1994; amended in R94-12 at 18 Ill. Reg. 14973, effective September 21, 1994; amended in R94-15 at 18 Ill. Reg.16379, effective November 4, 1994; amended in R94-16 at 18 Ill. Reg._____, effective _____; amended in R94-33 at 18 Ill. Reg._____, effective _____.

SUBPART V: BATCH OPERATIONS AND AIR OXIDATION PROCESSES

Section 218.500 Applicability for Batch Operations

a) The control requirements set forth in Section 218.501 of this Subpart shall apply to:

1) 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; and

2) All batch operations at Stepan Company's Millsdale manufacturing facility, Elwood, Illinois.

b) The requirements of Sections 218.500 through 218.506 shall not apply to:

1) Any emission unit included within the category specified in 35 Ill. Adm. Code Part 218, Subparts B or T;

2) Any emission unit included within the category specified in Sections 218.520 through 218.527 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 218.501 of this Subpart. However, the recordkeeping and reporting requirements in Section 218.505 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 218.502(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 218.501 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; and

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:

$$WAV = \frac{\sum_{i=1}^{n} \left[ (VP_i) \times \frac{(MVOM_i)}{(MWVOM_i)} \right]}{\sum_{i=1}^{n} \left[ \frac{(MVOM_i)}{(MWVOM_i)} \right]}$$

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 218.111 of this Part shall apply.

(Source: Added at _____ Ill. Reg. _____, effective _____ _____)

Section 218.501 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 218.502(b) of this Subpart, below the flow rate value calculated by the applicability equations contained in Section 218.500(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 218.502(b)(2) of this Subpart, below the flow rate value calculated by the applicability equations contained in Section 218.500(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 subsections (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 subsections (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 218.112 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 _____ Ill. Reg. _____, effective _____ _____)

Section 218.502 Determination of Uncontrolled Total Annual Mass Emissions and 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 single unit operation as set forth in Section 218.503(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, multiplied by the potential or permitted number of batch cycles per year 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 218.503(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. |

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 _____ Ill. Reg. _____, effective _____ _____)

Section 218.503 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 218.501 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 218.503(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 218.501 of this Subpart shall be exempt from performance testing requirements.

c) When a flare is used to comply with the control requirements of Section 218.501 of this Subpart, the flare shall comply with the requirements of 40 CFR 60.18, incorporated by reference at Section 218.112 of this Part.

d) The owner or operator of a batch operation that is exempt from the control requirements of Section 218.501 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 218.501 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 218.112 of this Part, shall be used to demonstrate compliance with the reduction efficiency requirement set forth in Section 218.501 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 will be the entire length of the batch cycle in which readings shall be taken continuously, if Method 25A is used, or as often as is possible using Method 18, with a maximum of 15-minute intervals between measurements throughout the batch cycle;

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 (c)(3)(A) and (c)(3)(B) 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 218.501(c) of this Subpart, shall demonstrate that such device achieves the control efficiency applicable within Section 218.501 of this Subpart upon the earlier to occur of the date the device is replace 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 218.501 of this Subpart. Such method or procedures shall be approved by the Agency and USEPA as evidenced by federally enforceable permit conditions.

(Source: Added at _____ Ill. Reg. _____, effective _____ _____)

Section 218.504 Monitoring Requirements for Batch Operations

a) Every owner or operator using an afterburner to comply with Section 218.501 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 218.501 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 218.501 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 218.501 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 stream 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 or 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 218.501 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 218.501(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 _____ Ill. Reg. _____, effective _____ _____)

Section 218.505 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 218.500(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 or measurements coupled with the potential or permitted number of batch cycles per year if the uncontrolled total annual mass emissions is obtained from measurements made in accordance with Section 218.503 of this Subpart.

b) Every owner or operator of a single unit operation exempt under Sections 218.500(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 the calculations or measurements coupled with the permitted or permitted number of emission events per year if the uncontrolled total annual mass emissions is obtained from measurements made in accordance with Section 218.503 of this Subpart; and

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 218.501 of this Subpart shall keep records of the following parameters required to be monitored under Section 218.504 of this Subpart:

1) If using a thermal or catalytic afterburner to comply with Section 218.501 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., stream-assisted, air-assisted or nonassisted) to comply with Section 218.501 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. For purposes of determining compliance with 40 CFR 60.18, incorporated by reference at 218.112 of this Part, records shall also be kept indicating heat content determinations, flow rate measurements and the exit velocity determinations.

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 stream 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 of 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 an 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 30 days of 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 218.501 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 (f) 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 218.501(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.

g) The owner or operator of a de minimis single unit operation or batch process train exempt from the control requirements of Section 218.501(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 218.501(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 _____ Ill. Reg. _____, effective _____ _____)

Section 218.506 Compliance Date

Every owner or operator of a batch operation subject to Sections 218.500 through 218.506 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 _____ Ill. Reg. _____, effective _____ _____)

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

## SUBPART A: GENERAL PROVISIONS



## SUBPART B: ORGANIC EMISSIONS FROM STORAGE AND LOADING OPERATIONS



## SUBPART C: ORGANIC EMISSIONS FROM MISCELLANEOUS EQUIPMENT



## SUBPART E: SOLVENT CLEANING

SUBPART F: COATING OPERATIONS



SUBPART G: USE OF ORGANIC MATERIAL



SUBPART H: PRINTING AND PUBLISHING



SUBPART Q: LEAKS FROM SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING PLANT

SUBPART R: PETROLEUM REFINING AND RELATED INDUSTRIES; ASPHALT MATERIALS



SUBPART S: RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS



SUBPART T: PHARMACEUTICAL MANUFACTURING



SUBPART V: <u>BATCH OPERATIONS AND</u> AIR OXIDATION PROCESSES

SUBPART W: AGRICULTURE



SUBPART X: CONSTRUCTION



SUBPART Y: GASOLINE DISTRIBUTION



SUBPART Z: DRY CLEANERS



SUBPART AA: PAINT AND INK MANUFACTURING

SUBPART BB: POLYSTYRENE PLANTS



SUBPART CC: POLYESTER RESIN PRODUCT MANUFACTURING PROCESS



SUBPART DD: AEROSOL CAN FILLING



SUBPART GG: MARINE TERMINALS

SUBPART PP: MISCELLANEOUS FABRICATED PRODUCT MANUFACTURING PROCESSES



SUBPART QQ: MISCELLANEOUS FORMULATION MANUFACTURING PROCESSES



SUBPART RR: MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING PROCESSES



SUBPART TT: OTHER EMISSION UNITS



SUBPART UU: RECORDKEEPING AND REPORTING

Section 219.Appendix C: Reference Test Methods for Air Oxidation Processes
Section 219.Appendix D: Coefficients for the Total Resource Effectiveness Index (TRE) Equation
Section 219.Appendix E: List of Affected Marine Terminals

AUTHORITY: Implementing Section 10 and authorized by Section 28.5 of the Environmental Protection Act (Ill. Rev. Stat. 1991, ch. 111½, par. 1010) (P.A. 87-1213, effective September 26, 1992) [415 ILCS 5/10 and 28.5].

SOURCE: Adopted at R91-7 at 15 Ill. Reg. 12231, effective August 16, 1991; amended in R91-23 at 16 Ill. Reg. 13564, effective August 24, 1992; amended in R91-28 and R91-30 at 16 Ill. Reg. 13864, effective August 24, 1992; amended in R93-9 at 17 Ill. Reg. 16636, effective September 27, 1993; amended in R93-14 at 18 Ill. Reg. at 1945, effective January 24, 1994; amended in R94-12 at 18 Ill. Reg. 14973, effective September 21, 1994; amended in R94-15 at 18 Ill. Reg. 16379, effective November 4, 1994; amended in R94-16 at 18 Ill. Reg._____, effective _____; amended in R94-33 at 18 Ill. Reg._____, effective _____.

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:

1) 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; and

2) All batch operations at Stepan Company's Millsdale manufacturing facility, Elwood, Illinois.

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 Part 219, Subparts 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; and

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:

$$WAV = \frac{\sum_{i=1}^{n} \left[ (VP_i) \times \frac{(MVOM_i)}{(MWVOM_i)} \right]}{\sum_{i=1}^{n} \left[ \frac{(MVOM_i)}{(MWVOM_i)} \right]}$$

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 _____ Ill. Reg. _____, effective _____ _____)

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 subsections (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 subsections (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 _____ Ill. Reg. _____, effective _____ _____)

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 single unit operation 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, multiplied by the potential or permitted number of batch cycles per year 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.

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 _____ Ill. Reg. _____, effective _____ _____)

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 will be the entire length of the batch cycle in which readings shall be taken continuously, if Method 25A is used, or as often as is possible using Method 18, with a maximum of 15-minute intervals between measurements throughout the batch cycle;

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 (c)(3)(A) and (c)(3)(B) 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 replace 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.

(Source: Added at _____ Ill. Reg. _____, effective _____ _____)

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 stream 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 or 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 _____ Ill. Reg. _____, effective _____ _____)

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 or measurements coupled with the potential or permitted number of batch cycles per year if the uncontrolled total annual mass emissions is obtained from measurements made in accordance with Section 219.503 of this Subpart.

b) Every owner or operator of a single unit operation exempt under Sections 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 the calculations or measurements coupled with the permitted or permitted number of emission events per year if the uncontrolled total annual mass emissions is obtained from measurements made in accordance with Section 219.503 of this Subpart; and

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., stream-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. For purposes of determining compliance with 40 CFR 60.18, incorporated by reference at 219.112 of this Part, records shall also be kept indicating heat content determinations, flow rate measurements and the exit velocity determinations.

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 stream 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 of 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 an 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 30 days of 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 (f) 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, 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.

g) The owner or operator of a de minimis single unit operation or batch process train exempt from the control requirements of Section 219.501(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 219.501(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 _____ Ill. Reg. _____, effective _____ _____)

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 _____ Ill. Reg. _____, effective _____ _____)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 15th day of November, 1994, by a vote of 6-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board