

ILLINOIS POLLUTION CONTROL BOARD  
October 17, 1996

IN THE MATTER OF: )  
 )  
15% ROP PLAN: CLEAN-UP ) R96-13  
PART II: AMENDMENTS TO ) (Rulemaking-Air)  
35 ILL. ADM. CODE PARTS )  
218 AND 219 )

Adopted Rule.            Final Order.

OPINION AND ORDER OF THE BOARD (by J. Theodore Meyer):

On December 13, 1995 the Illinois Environmental Protection Agency (Agency) filed this proposal for rulemaking pursuant to Section 28.5 of the Illinois Environmental Protection Act (Act). Section 182(b)(1) of the Clean Air Act (CAA), as amended in 1990, requires all moderate and above ozone nonattainment areas to achieve a 15% reduction of 1990 emissions of volatile organic material (VOM) by 1996. In Illinois, the Chicago and Metro-East St. Louis areas are classified as "severe" and "moderate" nonattainment for ozone, respectively, and as such are subject to the 15% reduction requirement. Also pursuant to Section 182(b) of the CAA, Illinois is to submit a 15% Rate of Progress Plan (ROP) within three years of the enactment of the CAA amendments. This rulemaking represents corrections and clarifications to parts 218 and 219 of the rules proposed in the Illinois 15% ROP.

The Board's responsibility in this matter arises from the Act (415 ILCS 5/1 *et seq.* (1994)). The Board is charged therein to "determine, define and implement the environmental control standards applicable in the State of Illinois". (415 ILCS 5/5(b).) This proposal was filed pursuant to Section 28.5 of the Act, commonly referred to as "Fast Track Rulemaking", which requires the Board to proceed with rulemaking under set time frames. (415 ILCS 5/28.5) Today the Board acts to adopt the proposed rules as final, adopted regulations.

PROCEDURAL HISTORY

In its December 13, 1995 proposal, the Agency submitted seven (7) minor amendments to the 15% ROP Plan which are detailed below. The Agency also filed a motion to waive certain filing requirements found in 35 Ill. Adm. Code 102, which the Board granted at its December 20, 1995 meeting.

Pursuant to Section 28.5 of the Act, the Board sent this proposal to first notice under the Administrative Procedure Act on December 20, 1995 without commenting on the merits. The proposal was published in the Illinois Register at 20 Ill.Reg. 122 for Part 218 and 20 Ill.Reg. 155 for Part 219. In response to the first notice publication, the Board received two comments from the Joint Committee on Administrative Rules (JCAR) regarding minor changes, which were subsequently incorporated into the final rules.

A public hearing was held in Chicago on February 6, 1996 before hearing officer K.C. Poulos. The public comment period closed on February 27, 1996; no public comments were received. The Board sent the proposal to second notice on March 21, 1996 and JCAR voted no objection on October 15, 1996. The final rules are identical to the second notice proposal.

PROPOSAL

The Agency recommended seven amendments or clarifications in 35 Ill. Adm. Code Parts 218 and 219. First, Section 218.108(b) allows a source to obtain a variation of a control plan or an alternative to a test method through a federally enforceable permit. However, this "equivalent alternative control plan" language was inadvertently omitted from part 219. This proposal adds the same language found in Section 218.108(b) to new Section 219.108(b). Second, the Agency amended certain equations found in Sections 218.110(b), 219.110(b) and 219.111(b) in In the Matter of: Omnibus Cleanup of Volatile Organic RACT Rule Applicable to Ozone Nonattainment Areas: Amendments to 35 Ill. Adm. Code Parts 203, 211, 218 and 219 (September 9, 1993) R93-9. However, the Agency did not specify the components of the amended equations; this rule corrects those components.

Third, this rule corrects certain cross references found in Sections 218.208(c), 219.208(c), 218.208(b)(4) and 219.208(b)(4) regarding recordkeeping and reporting requirements for facilities which use touch-up and repair coatings. The fourth amendment corrects a citation to the Federal Register, and further corrects typographical errors in Sections 218.434, 218.435, 219.434 and 219.435.

The fifth amendment reflects the Illinois General Assembly's repeal of regulations for emissions from bakery ovens in Public Law 98-79 in spring, 1995. The sixth amendment corrects the exemption for polyethylene foam packaging operations so that it mirrors the exemption for polystyrene foam packaging operations. Finally, this rule corrects the standard temperature for one of the calculations found in Appendix G of both parts, specifically, the calculation for determining the net heating value of the vent stream.

The Board also received minor editorial corrections from JCAR, and a revision that strikes the words "Leaks from" from the title of Subpart Q so that it reads "Synthetic Organic Chemical and Polymer Manufacturing Plant".

## CONCLUSION

The Board finds that the proposed rules are technically feasible and economically reasonable, and that the rules are necessary to meet the requirements of the Clean Air Act. The Board therefore finds that the record supports the final adoption of the proposed rules as amended.

## ORDER

The Board hereby adopts the following amendments to 35 Ill. Adm. Code 218 and 219. The Board directs the Clerk to submit the following amendments to the Secretary of State Administrative Code Division as final adopted rules:

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

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218.101	Savings Clause
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218.210	Compliance Schedule
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#### SUBPART G: USE OF ORGANIC MATERIAL

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218.302	Alternative Standard
218.303	Fuel Combustion Emission Units
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218.402	Applicability
218.403	Compliance Schedule
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218.405	Lithographic Printing: Applicability
218.406	Provisions Applying to Heatset Web Offset Lithographic Printing Prior to March 15, 1996
218.407	Emission Limitations and Control Requirements for Lithographic Printing Lines On and After March 15, 1996
218.408	Compliance Schedule for Lithographic Printing on and After March 15, 1996
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SUBPART CC: POLYESTER RESIN PRODUCT  
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Section 218.Appendix A:   List of Chemicals Defining Synthetic Organic Chemical and Polymer Manufacturing  
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Section 218.Appendix G:   TRE Index Measurements for SOCFI Reactors and Distillation Units  
Section 218.Appendix H:   Baseline VOM Content Limitations for Subpart F, Section 218.212 Cross-Line Averaging

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

SOURCE: Adopted at R91-7 at 15 Ill. Reg. 12231, effective August 16, 1991; amended in R91-24 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 14945, effective January 24, 1994; amended in R94-12 at 18 Ill. Reg. at 14973, effective September 21, 1994; amended in R94-15 at 18 Ill. Reg. 16392, effective October 25, 1994; amended in R94-16 at 18 Ill. Reg. 16950, effective November 15, 1994; amended in R94-21, R94-31 and R94-32 at 19 Ill. Reg. 6848, effective May 9, 1995; amended in R94-33 at 19 Ill. Reg. 7359, effective May 22, 1995; amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

BOARD NOTE: This Part implements the Environmental Protection Act as of July 1, 1994.

#### SUBPART A: GENERAL PROVISIONS

Section 218.110      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 218.112 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:

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

where:

- $P_{\text{om}}$  = 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 218.112 of this Part) or by the above equation.

(Source: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 218.111 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 218.112 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 218.112 of this Part) or by the above equation.

(Source: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART F: COATING OPERATIONS

### Section 218.208 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 218.204 (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 218.204 (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.) 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. Any owner or operator of a coating source shall comply with the applicable coating analysis test methods and procedures specified in Section 218.105 (a) of this Part and the recordkeeping and reporting requirements specified in Section 218.211 (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 218.204 of this Subpart. Once a category of coating lines at a source is subject to the limitations in Section 218.204 of this Subpart the coating lines are always subject to the limitations in Section 218.204 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 218.204 (l) of this Subpart), H (excluding Section 218.405 of this Part), Q, R, S, T (excluding Section 218.486 of this Part), V, X, Y, 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 which:
  - A) Are not regulated by Subparts B, E, F (excluding Section 218.204 (l) of this Subpart), H, Q, R, S, T (excluding Section 218.486 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 218.204 (l) of this Subpart shall continue to apply to any wood furniture coating line which was ever subject to the limitations of Section 218.204 (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 subsections 218.204(b), (d), (f), (g), (i), (j), (n) and (o) of this Subpart; provided that the source-wide volume of such 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 ~~Section 218.211(b)(4) of this Subpart~~ subsection (d) of this Section.
- d) 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 218.204(b), (d), (f), (g), (i), (j), (n) and (o) of this Subpart because of the provisions of Section 218.208 (c) of this Subpart 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 twelve month period;
  - 4) Prepare and maintain at the source an annual summary of the information required to be compiled pursuant to subsections ~~(c) (4) (A) and (c) (4) (B)~~ (d) (1) and (d)(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 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 l (1 quart) per eight-hour period or exceeds 209 l/yr ~~{55 gal/yr}~~ for any rolling twelve 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 218.208, any coating used to cover minor scratches and nicks that occur during manufacturing and assembly processes.

(Source: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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

Section 218.431 Applicability

- a) The provisions of Sections 218.431 through 218.436 of this Subpart shall apply to:
- 1) 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.
  - 2) All continuous distillation and reactor process emission units not subject to Section 218.520 through 218.527 of this Part, and located within Stepan Company's Millsdale manufacturing facility, Elwood, Illinois.
- b) Notwithstanding subsection (a) of this Section, the control requirements set forth within Section 218.432 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 218.433 of this Subpart and the reporting and recordkeeping requirements contained in Section 218.435 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 218.435 (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 218.433 of this Subpart, as well as the reporting and recordkeeping requirements contained in Section 218.435 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~~) (December 29, 1992), evidenced by a timely enforceable commitment approved by USEPA.

(Source: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 218.434 Monitoring Requirements

- a) The owner or operator of a source subject to the control requirements in Section 218.432 of this Subpart that uses an incinerator to comply with the VOM emission limitation specified in Section 218.432 (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  $\pm 1$  percent of the temperature measured expressed in degrees Celsius, or  $\pm 0.5^{\circ}\text{C}$ , 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 catalytic bed.
- b) The owner or operator of a source that uses a flare to comply with Section 218.432 (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 218.432(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  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5^{\circ}\text{C}$ , 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 subsections (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  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater.
  - 3) Where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration ~~stream~~ steam flow monitoring device having an accuracy of  $\pm 10$  percent, capable of recording the total regeneration ~~stream~~

steam mass flow for each regeneration cycle; and a carbon bed temperature monitoring device having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius of  $\pm 0.5^{\circ}\text{C}$ , capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle.

- 4) 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: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 218.435 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 218.433 of this Subpart, and required to be monitored under Section 218.434 of this Subpart.
  - 1) Every owner or operator of a source that seeks to demonstrate compliance with Section 218.432(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 218.433 (c) of this Subpart achieved by the incinerator, or the concentration of VOM (ppmv, by compound) determined as specified in Section 218.433 (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 218.432 (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 218.432 (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 218.432 (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 ~~stream~~ 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 218.432 (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 ~~Section~~ 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 218.431 (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 218.431 (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: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART FF: BAKERY OVENS (Repealed)

### Section 218.720 Applicability (Repealed)

- ~~a) The provisions of this Subpart shall apply to every owner or operator of a source which operates a bakery oven, as defined at 35 Ill. Admin. Code 211.680, unless the source bakes products only for on-site human consumption or on-site retail sale.~~
- ~~b) Notwithstanding subsection (a) of this Section, a source is required to comply with the control requirements of this Subpart only if the source has the potential to emit 22.7 Mg (25 tons) or more of VOM per year, in the aggregate, from all emission units at the source, excluding:~~

- ~~1) Emission units regulated by Subparts B, E, F, H, Q, R, S, T (excluding Section 218.486 of this Part), V, X, Y, Z or BB of this Part; and~~
- ~~2) Emission units that are included in any of the following categories: synthetic organic chemical manufacturing industry (SOCMI) distillation, SOCMI reactors, wood furniture coating, 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.~~
- ~~c) Every owner or operator of a source which has limited its potential to emit below 22.7 Mg (25 tons) of VOM per year, as specified in subsection (b) of this Section, through federally enforceable permit conditions is not required to comply with this Subpart.~~
- ~~d) Every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria in subsection (b) of this Section remains subject to the recordkeeping and reporting requirements of Section 218.728(b) of this Subpart and the certification requirements in Section 218.730(d) of this Subpart.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 218.722 Control Requirements (Repealed)

- ~~a) Every owner or operator of a source subject to the control requirements of this Subpart shall comply with the requirements of subsection (a)(1) or (a)(2) of this Section for each bakery oven with a rated heat input capacity of at least 2 mmbtu/hr or at least 586 kW:~~
  - ~~1) Operate emissions capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each such bakery oven; or~~
  - ~~2) Provide an equivalent alternative control plan for such bakery ovens at the source which has been approved by the Agency and USEPA through federally enforceable permit conditions or as a SIP revision.~~
- ~~b) An owner or operator of a source subject to the control requirements of this Subpart may elect to exempt from the control requirements in subsections (a)(1) or (a)(2) and (c)(1) or (c)(2) of this Section any bakery oven with actual VOM emissions less than or equal to 15 TPY; provided that the total actual VOM emissions from all such exempt bakery ovens never exceed 25 TPY.~~
- ~~c) Notwithstanding the requirements in subsection (a) of this Section, until March 15, 1998, only, a source may elect to comply with the control requirements in subsection (c)(1) or (c)(2) of this Section, rather than the control requirements in subsection (a)(1) or (a)(2) of this Section, if all emission units at the source, in the aggregate, excluding emission units regulated by Subparts B, E, F, H (excluding Section 218.405 of this Subpart), Q, R, S, T (excluding Section 218.486 of this Subpart), V, X, Y, Z or BB of this Part, have maximum theoretical emissions of less than 90.7 Mg (100 tons) of VOM per year or are~~

~~limited to less than 90.7 Mg (100 tons) of VOM emissions per calendar year in the absence of air pollution control equipment through production or capacity limitations contained in federally enforceable permit conditions or in a SIP revision:~~

- ~~1) Operate emissions capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 60 percent from each bakery oven with a rated heat input capacity of at least 2 mmbtu/hr or at least 586 KW; or~~
- ~~2) Provide an equivalent alternative control plan for such bakery ovens at the source which has been approved by the Agency and USEPA through federally enforceable permit conditions or as a SIP revision.~~
- ~~d) Any bakery oven that becomes subject to the requirements of this Subpart at any time shall remain subject to the requirements of this Subpart at all times thereafter.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 218.726      Testing (Repealed)

- ~~a) Upon request by the Agency, the owner or operator of a bakery oven shall, at its own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 218.105(f) of this Part to demonstrate compliance with the control requirements of this Subpart and shall:~~
  - ~~1) Notify the Agency 30 days prior to conducting such tests; and~~
  - ~~2) Submit all test results to the Agency within 30 days of conducting such tests.~~
- ~~b) Nothing in this Section shall limit the authority of USEPA pursuant to the Clean Air Act (CAA) to require testing, or shall affect the authority of USEPA under Section 114 of the CAA (42 U.S.C. 7414 (1990)).~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 218.727      Monitoring (Repealed)

- ~~a) Every owner or operator of a bakery oven subject to the control requirements of this Subpart shall install and operate at all times a device to continuously monitor the following parameters for each type of control device as follows:~~
  - ~~1) For catalytic oxidizers, the inlet and outlet temperatures of the oxidizer;~~
  - ~~2) For regenerative oxidizers, the temperature in the combustion chamber;~~  
~~or~~
  - ~~3) For thermal incinerators, the temperature in the combustion chamber.~~
- ~~b) The owner or operator may monitor with an alternative method or monitor other~~

~~parameters if approved by the Agency and USEPA through federally enforceable permit conditions or as a SIP revision.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 218.728 Recordkeeping and Reporting (Repealed)

- ~~a) Every owner or operator of a bakery oven shall maintain the following records for the most recent consecutive 3 year period for all bakery ovens subject to the control requirements of this Subpart. Such records shall be made available to the Agency immediately upon request.~~
  - ~~1) Parameters for control devices as monitored pursuant to Section 218.727 of this Subpart;~~
  - ~~2) Hrs/day of operation of each bakery oven;~~
  - ~~3) Factors necessary to calculate VOM emissions for all bakery ovens including, but not limited to, type of dough used for each yeast leavened baked product, initial yeast percentage for each product, total fermentation time for each product, any additional percentage of yeast added, and the fermentation time of any additional yeast;~~
  - ~~4) Calculated daily VOM emissions of each bakery oven expressed as lbs/day;~~
  - ~~5) Total amount of each type of yeast leavened bread product produced by each bakery oven expressed as lbs/day.~~
- ~~b) Every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria in Section 218.720(b) of this Subpart shall maintain records necessary to demonstrate that its potential to emit is less than 22.7 Mg (25 tons) of VOM per year, as specified in Section 218.720(b). Such records shall be maintained for the most recent consecutive 3 year period and shall be made available to the Agency immediately upon request.~~
- ~~c) Every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria specified in Section 218.722(b) of this Subpart shall:~~
  - ~~1) Maintain records necessary to demonstrate that the actual VOM emissions from exempt bakery ovens are less than or equal to 15 TPY for each bakery oven and less than or equal to 25 TPY from all exempt bakery ovens combined. Such records shall be maintained for the most recent consecutive 3 year period and shall be made available to the Agency immediately upon request; and~~
  - ~~2) Notify the Agency in writing if the actual VOM emissions from an exempt bakery oven ever exceed 15 TPY or the actual VOM emissions from a combination of exempt bakery ovens ever exceed 25 TPY, within 30 days after the exceedance occurs. Such notice shall include a copy of all records of the exceedance.~~

- ~~d) Every owner or operator of a bakery oven which is controlling emissions as provided in Section 218.722(c) of this Subpart until March 15, 1998, shall maintain records necessary to demonstrate that its maximum theoretical emissions as specified in Section 218.722(c) are less than 90.7 Mg (100 tons) of VOM per year. Such records shall be maintained for the most recent consecutive 3 year period and shall be made available to the Agency immediately upon request.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 218.729 Compliance Date (Repealed)

~~On and after March 15, 1996, upon initial startup or upon modification, every owner or operator of a source subject to this Subpart shall comply with the requirements of this Subpart.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 218.730 Certification (Repealed)

- ~~a) Every owner or operator of a source subject to the control requirements of this Subpart shall certify compliance with this Subpart on or before a date consistent with Section 218.729 of this Subpart.~~
- ~~b) If an owner or operator of a bakery oven subject to the control requirements of this Subpart changes the method of compliance, the owner or operator shall certify compliance with the requirements of this Subpart for the alternative method upon changing the method of compliance.~~
- ~~c) All certifications of compliance with this Subpart shall include the results of all tests and the calculations performed to demonstrate that each oven at the source is in compliance with, or is exempt from, the control requirements of this Subpart. The certification shall include the following:~~
- ~~1) The name and identification number of each oven and any associated capture and control device;~~
  - ~~2) The maximum rated heat input of each oven;~~
  - ~~3) A classification of each oven as either a "bakery oven" as defined in 35 Ill. Admin. Code 211.680 or an oven used exclusively to bake non-yeast leavened products;~~
  - ~~4) The capture and control efficiency of each bakery oven control device;~~
  - ~~5) Test reports, calculations, and other data necessary to demonstrate that the capture and control efficiency of each bakery oven control device achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent; and~~
  - ~~6) The date each bakery oven control device was installed and operating.~~

- ~~d) On or before March 15, 1996, or upon initial startup, every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria in Section 218.720(b) of this Subpart shall certify that its potential to emit is less than 22.7 Mg (25 tons) of VOM per year, as specified in Section 218.720(b).~~
- ~~e) On or before March 15, 1996, or upon initial startup, every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria specified in Section 218.722(b) of this Subpart shall certify that actual VOM emissions from any individual exempt bakery oven never exceed 15 TPY and that VOM emissions from all exempt bakery ovens, in the aggregate, never exceed 25 TPY.~~
- ~~f) On or before March 15, 1996, or upon initial startup if prior to March 15, 1998, every owner or operator of a bakery oven which is controlling emissions as provided by Section 218.722(c) of this Subpart shall certify that its maximum theoretical emissions as specified in Section 218.722(c) are less than 90.7 Mg (100 tons) of VOM per year.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART TT: OTHER EMISSION UNITS

##### Section 218.980 Applicability

- a) Maximum theoretical emissions:
  - 1) A source is subject to this Subpart if it contains process emission units not regulated by Subparts B, E, F (excluding Section 218.204 (l) of this Part), H (excluding Section 218.405 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:
    - A) Have maximum theoretical emissions of 90.7 Mg (100 tons) or more per calendar year of VOM, and
    - B) Are not limited to less than 90.7 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.
  - 2) If a source is subject to this Subpart as provided in this Subpart, 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 which are not exempted from permitting requirements pursuant to 35 Ill. Adm. Code 201.146.
- b) Potential to emit:
  - 1) A source is subject to this Subpart if it has the potential to emit 22.7 Mg (25 tons) or more of VOM per year, in aggregate, from emission units, other than furnaces at glass container manufacturing sources and VOM

leaks from components, that are:

- A) Not regulated by Subparts B, E, F, H, Q, R, S, T, (excluding Section 218.486 of this Part), V, X, Y, Z, or BB of this Part, or
  - B) Not included in any of the following categories: synthetic organic chemical manufacturing industry (SOCMI) distillation, SOCMI reactors, wood furniture, 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.
- 2) If a source is subject to this Subpart as provided above, the requirements of this Subpart shall apply to a source's VOM emission units, which are:
- A) Not included within any of the categories specified in Subparts B, E, F, H, Q, R, S, T, V, X, Y, Z, AA, BB, CC, DD, PP, QQ or RR of this Part, or which are not exempted from permitting requirements pursuant to 35 Ill. Adm. Code 201.146 (excluding Section 201.146 (o) and (p)), or
  - B) Not included in any of the following categories: synthetic organic chemical manufacturing industry (SOCMI) distillation, SOCMI reactors, wood furniture, 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.
- c) If a source ceases to fulfill the criteria of subsections (a) and/or (b) 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.
- d) 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 Section 219.986 of this Part does not exceed 4.5 Mg (5.0 tons) per calendar year.
- e) 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 considered not 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.
- f) The control requirements in Subpart TT 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 or

polyethylene foam packaging not including blending and preliminary expansion of resin prior to molding where blowing agent is incorporated into the polystyrene or polyethylene resin by the producer of the resin, and not including storage and extrusion of scrap where blowing agent is added to the polystyrene or polyethylene resin at the source; and iron and steel production; and furnaces at glass container manufacturing sources.

(Source: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 218. Appendix G TRE Index Measurements for SOCM I Reactors and Distillation Units

For purposes of Subpart Q, Sections 218.431 through 218.435, 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 218.112 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 cm 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 218.112 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 218.112 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) (1) (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 218.112 of this Part, to measure the concentration of organic compounds including those containing halogens;
  - B) ASTM D1946-77, incorporated by reference at Section 218.112 of this Part, to measure the concentration of carbon monoxide and hydrogen; and
  - C) Method 4, incorporated by reference at Section 218.112 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 218.112 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:

$$E_{VOM} = \sum_{j=1}^n K_2 S C_j M_j Q_s$$

where:

$E_{VOM}$  = Emission rate of VOM (minus methane and ethane) in the sample, kg/hr.

$K_2$  = Constant,  $2.494 \times 10^{-6}$  (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 218.112 of this Part, as indicated in Section 218.433 (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 218.112 of this Part.
- 6) The net heating value of the vent stream shall be calculated using the following:

$$H_T = \sum_{j=1}^n K_1 S C_j H_j (1-B_{ws})$$

where:

- $H_T$  = Net heating value of the sample (MJ/scm), where the net enthalpy 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~~ 20°C, as in the definition of  $Q_s$  (vent stream flow rate).
- $K_1$  = Constant,  $1.740 \times 10^{-7}$  (ppmv)<sup>-1</sup> (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.
- $C_j$  = Concentration on a dry basis of compound j in ppmv, as measured for all organic compounds by Method 18, incorporated by reference at Section 218.112 of this Part, and measured for hydrogen and carbon monoxide by using ASTM D1946-77, incorporated by reference at Section 218.112 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 218.112 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:

$$TRE = \frac{1}{E_{VOM}} [a + b (Q_s) + c (H_T) + d (E_{VOM})]$$

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:

Type of Stream	Control Device Basis	Value of Coefficients			
		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 incinerator 70 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 d in subsection (b) (1) of this Appendix to calculate the TRE index value based on a flare, a thermal incinerator with zero 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 coefficients identified for values a, b, c and d in subsection (b) (1) 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 218.432 (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 218.435 (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 218.435 (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 218.433 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 218.433 (c) (1) of this Part.
    - 2) Method 18 or Method 25A of 40 CFR Part 60, Appendix A, incorporated by reference at Section 218.112 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 218.112 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 218.433(c) (4) of this Part.
- 4) Where Method 25A is used, the following procedures shall be used to calculate ppmv VOM concentration:
  - A) 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.
  - B) 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 218.112 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.
  - C) 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.
  - D) The span value for Method 25A shall be 50 ppmv.
  - E) 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.
  - F) The concentration of VOM shall be corrected to 3 percent oxygen using the procedures and equation in Section 218.433 (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 218.431 of this Part.

(Source: Amended 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

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

SOURCE: Adopted at 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 \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_; amended in R96 \_\_ at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

BOARD NOTE: This Part implements the Illinois Environmental Protection Act as of July 1, 1994.

#### SUBPART A: GENERAL PROVISIONS

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

Notwithstanding the provisions of any other Sections of this Part, :

- a) ~~Any~~ 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.
- b) Any equivalent alternative control plans, equivalent device, or other equivalent practice authorized by the Agency where this Part provides for such alternative or equivalent practice or equivalent variations or alterations to test methods approved by the Agency shall be effective only when included in a federally enforceable permit or approved as a SIP revision.

(Source: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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 \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### 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 \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART F: COATING OPERATIONS

### 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.) 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. 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 Subpart 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 which:
  - 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 subsections 219.204(b), (d), (f), (g), (i), (j), (m) and (n) of this Subpart; provided that the source-wide volume of such 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 ~~Section 219.211(b)(4) of this Subpart~~ subsection (d) of this Section.
- d) 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) and (n) of this Subpart because of the provisions of Section 219.208(c) of this Subpart 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 twelve month period;
  - 4) Prepare and maintain at the source an annual summary of the information required to be compiled pursuant to subsections ~~(c)(4)(A) and (c)(4)(B)~~ (d) (1) and (d) (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~~ required to be kept under this subsection 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 l (1 quart) per eight-hour period or exceeds 209 l/yr (55 gal/yr) for any rolling twelve 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 \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART Q: SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING PLANT

##### 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) (December 29, 1992), evidenced by a timely enforceable commitment approved by USEPA.

(Source: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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  $\pm 1$  percent of the temperature measured expressed in degrees Celsius, or  $\pm 0.5^{\circ}\text{C}$ , 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  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5^{\circ}\text{C}$ , 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 ~~subsections~~ ~~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  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater.
  - 3) Where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration ~~stream~~ ~~steam~~ flow monitoring device having an accuracy of  $\pm 10$  percent, capable of recording the total regeneration ~~stream~~

steam mass flow for each regeneration cycle; and a carbon bed temperature monitoring device having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius of  $\pm 0.5^{\circ}\text{C}$ , capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle.

- 4) 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: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### 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 ~~stream~~ 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 ~~Section~~ 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: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART FF: BAKERY OVENS (Repealed)

#### Section 219.720 Applicability (Repealed)

- ~~a) The provisions of this Subpart shall apply to every owner or operator of a source which operates a bakery oven, as defined at 35 Ill. Adm. Code 211.680, unless the source bakes products only for on-site human consumption or on-site retail sale.~~
- ~~b) Notwithstanding subsection (a) of this Section, a source is required to comply with the control requirements of this Subpart only if the source has the potential to emit 22.7 Mg (25 tons) or more of VOM per year, in the aggregate, from all emission units at the source, excluding:~~

- ~~1) Emission units regulated by Subparts B, E, F, H, Q, R, S, T (excluding Section 219.486 of this Part), V, X, Y, Z or BB of this Part; and~~
- ~~2) Emission units that are included in any of the following categories: synthetic organic chemical manufacturing industry (SOCMI) distillation, SOCMI reactors, wood furniture coating, 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.~~
- ~~c) Every owner or operator of a source which has limited its potential to emit below 22.7 Mg (25 tons) of VOM per year, as specified in subsection (b) of this Section, through federally enforceable permit conditions is not required to comply with this Subpart.~~
- ~~d) Every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria in subsection (b) of this Section remains subject to the recordkeeping and reporting requirements of Section 219.728(b) of this Subpart and the certification requirements in Section 219.730(d) of this Subpart.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 219.722 Control Requirements (Repealed)

- ~~a) Every owner or operator of a source subject to the control requirements of this Subpart shall comply with the requirements of subsection (a)(1) or (a)(2) of this Section for each bakery oven with a rated heat input capacity of at least 2 mmbtu/hr or at least 586 kW:~~
  - ~~1) Operate emissions capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each such bakery oven; or~~
  - ~~2) Provide an equivalent alternative control plan for such bakery ovens at the source which has been approved by the Agency and USEPA through federally enforceable permit conditions or as a SIP revision.~~
- ~~b) An owner or operator of a source subject to the control requirements of this Subpart may elect to exempt from the control requirements in subsections (a)(1) or (a)(2) and (c)(1) or (c)(2) of this Section any bakery oven with actual VOM emissions less than or equal to 15 TPY; provided that the total actual VOM emissions from all such exempt bakery ovens never exceed 25 TPY.~~
- ~~c) Notwithstanding the requirements in subsection (a) of this Section, until March 15, 1998, only, a source may elect to comply with the control requirements in subsection (c)(1) or (c)(2) of this Section, rather than the control requirements in subsection (a)(1) or (a)(2) of this Section, if all emission units at the source, in the aggregate, excluding emission units regulated by Subparts B, E, F, H (excluding Section 219.405 of this Subpart), Q, R, S, T (excluding Section 219.486 of this Subpart), V, X, Y, Z or BB of this Subpart, have maximum~~

~~theoretical emissions of less than 90.7 Mg (100 tons) of VOM per year or are limited to less than 90.7 Mg (100 tons) of VOM emissions per calendar year in the absence of air pollution control equipment through production or capacity limitations contained in federally enforceable permit conditions or in a SIP revision:~~

- ~~1) Operate emissions capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 60 percent from each bakery oven with a rated heat input capacity of at least 2 mmbtu/hr or at least 586 KW; or~~
- ~~2) Provide an equivalent alternative control plan for such bakery ovens at the source which has been approved by the Agency and USEPA through federally enforceable permit conditions or as a SIP revision.~~
- ~~d) Any bakery oven that becomes subject to the requirements of this Subpart at any time shall remain subject to the requirements of this Subpart at all times thereafter.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 219.726      Testing (Repealed)

- ~~a) Upon request by the Agency, the owner or operator of a bakery oven shall, at its own expense, conduct such tests in accordance with the applicable test methods and procedures specified in Section 219.105(f) of this Part to demonstrate compliance with the control requirements of this Subpart and shall:~~
  - ~~1) Notify the Agency 30 days prior to conducting such tests; and~~
  - ~~2) Submit all test results to the Agency within 30 days of conducting such tests.~~
- ~~b) Nothing in this Section shall limit the authority of USEPA pursuant to the Clean Air Act (CAA) to require testing, or shall affect the authority of USEPA under Section 114 of the CAA (42 U.S.C. 7414 (1990)).~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 219.727      Monitoring (Repealed)

- ~~a) Every owner or operator of a bakery oven subject to the control requirements of this Subpart shall install and operate at all times a device to continuously monitor the following parameters for each type of control device as follows:~~
    - ~~1) For catalytic oxidizers, the inlet and outlet temperatures of the oxidizer;~~
    - ~~2) For regenerative oxidizers, the temperature in the combustion chamber;~~
- ~~or~~

- ~~3) For thermal incinerators, the temperature in the combustion chamber.~~
- ~~b) The owner or operator may monitor with an alternative method or monitor other parameters if approved by the Agency and USEPA through federally enforceable permit conditions or as a SIP revision.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 219.728 Recordkeeping and Reporting (Repealed)

- ~~a) Every owner or operator of a bakery oven shall maintain the following records for the most recent consecutive 3 year period for all bakery ovens subject to the control requirements of this Subpart. Such records shall be made available to the Agency immediately upon request.~~
  - ~~1) Parameters for control devices as monitored pursuant to Section 219.727 of this Subpart;~~
  - ~~2) Hrs/day of operation of each bakery oven;~~
  - ~~3) Factors necessary to calculate VOM emissions for all bakery ovens including, but not limited to, type of dough used for each yeast-leavened baked product, initial yeast percentage for each product, total fermentation time for each product, any additional percentage of yeast added, and the fermentation time of any additional yeast;~~
  - ~~4) Calculated daily VOM emissions of each bakery oven expressed as lbs/day;~~
  - ~~5) Total amount of each type of yeast leavened bread product produced by each bakery oven expressed as lbs/day.~~
- ~~b) Every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria in Section 219.720(b) of this Subpart shall maintain records necessary to demonstrate that its potential to emit is less than 22.7 Mg (25 tons) of VOM per year, as specified in Section 219.720(b). Such records shall be maintained for the most recent consecutive 3 year period and shall be made available to the Agency immediately upon request.~~
- ~~c) Every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria specified in Section 219.722(b) of this Subpart shall:~~
  - ~~1) Maintain records necessary to demonstrate that the actual VOM emissions from exempt bakery ovens are less than or equal to 15 TPY for each bakery oven and less than or equal to 25 TPY from all exempt bakery ovens combined. Such records shall be maintained for the most recent consecutive 3 year period and shall be made available to the Agency immediately upon request; and~~
  - ~~2) Notify the Agency in writing if the actual VOM emissions from an~~

~~exempt bakery oven ever exceed 15 TPY or the actual VOM emissions from a combination of exempt bakery ovens ever exceed 25 TPY, within 30 days after the exceedance occurs. Such notice shall include a copy of all records of the exceedance.~~

- ~~d) Every owner or operator of a bakery oven which is controlling emissions as provided in Section 219.722(c) of this Subpart until March 15, 1998, shall maintain records necessary to demonstrate that its maximum theoretical emissions as specified in Section 219.722(c) are less than 90.7 Mg (100 tons) of VOM per year. Such records shall be maintained for the most recent consecutive 3 year period and shall be made available to the Agency immediately upon request.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 219.729 Compliance Date (Repealed)

~~On and after March 15, 1996, upon initial startup or upon modification, every owner or operator of a source subject to this Subpart shall comply with the requirements of this Subpart.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### Section 219.730 Certification (Repealed)

- ~~a) Every owner or operator of a source subject to the control requirements of this Subpart shall certify compliance with this Subpart on or before a date consistent with Section 219.729 of this Subpart.~~
- ~~b) If an owner or operator of a bakery oven subject to the control requirements of this Subpart changes the method of compliance, the owner or operator shall certify compliance with the requirements of this Subpart for the alternative method upon changing the method of compliance.~~
- ~~c) All certifications of compliance with this Subpart shall include the results of all tests and the calculations performed to demonstrate that each oven at the source is in compliance with, or is exempt from, the control requirements of this Subpart. The certification shall include the following:~~
- ~~1) The name and identification number of each oven and any associated capture and control device;~~
  - ~~2) The maximum rated heat input of each oven;~~
  - ~~3) A classification of each oven as either a "bakery oven" as defined in 35 Ill. Admin. Code 211.680 or an oven used exclusively to bake non-yeast leavened products;~~
  - ~~4) The capture and control efficiency of each bakery oven control device;~~
  - ~~5) Test reports, calculations, and other data necessary to demonstrate that~~

~~the capture and control efficiency of each bakery oven control device achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent; and~~

- ~~6) The date each bakery oven control device was installed and operating.~~
- ~~d) On or before March 15, 1996, or upon initial startup, every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria in Section 219.720(b) of this Subpart shall certify that its potential to emit is less than 22.7 Mg (25 tons) of VOM per year, as specified in Section 219.720(b).~~
- ~~e) On or before March 15, 1996, or upon initial startup, every owner or operator of a bakery oven which is exempt from the control requirements of this Subpart because of the criteria specified in Section 219.722(b) of this Subpart shall certify that actual VOM emissions from any individual exempt bakery oven never exceed 15 TPY and that VOM emissions from all exempt bakery ovens, in the aggregate, never exceed 25 TPY.~~
- ~~f) On or before March 15, 1996, or upon initial startup if prior to March 15, 1998, every owner or operator of a bakery oven which is controlling emissions as provided by Section 219.722(c) of this Subpart, shall certify that its maximum theoretical emissions as specified in Section 219.722(e) are less than 90.7 Mg (100 tons) of VOM per year.~~

(Source: Repealed at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 219.Appendix G      TRE Index Measurements for SOCFI 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 cm 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) (1) (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 D1946-77, 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:

$$E_{VOM} = \sum_{j=1}^n K_2 S C_j M_j Q_s$$

where:

$E_{VOM}$  = Emission rate of VOM (minus methane and ethane) in the sample, kg/hr.

$K_2$  = Constant,  $2.494 \times 10^{-6}$  (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:

$$H_T = \sum_{j=1}^n K_1 S C_j H_j (1-B_{ws})$$

where:

$H_T$  = Net heating value of the sample (MJ/scm), where the net enthalpy 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~~ 20°C as in the definition of  $Q_s$  (vent stream flow rate).

$K_1$  = Constant,  $1.740 \times 10^{-7}$  (ppmv)<sup>-1</sup> (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.

$C_j$  = 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:

$$TRE = \frac{1}{E_{VOM}} [a + b (Q_s) + c (H_T) + d (E_{VOM})]$$

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.
- $H_r$  = 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:

Type of Stream	Control Device Basis	Value of Coefficients			
		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 incinerator 70 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 d in subsection (b) (1) of this Appendix to calculate the TRE index value based on a flare, a thermal incinerator with zero 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 coefficients identified for values a, b, c and d in subsection (b) (1) 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:
    - A) 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.
    - B) 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.
    - C) 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.
    - D) The span value for Method 25A shall be 50 ppmv.
    - E) 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.

- F) 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.

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: Amended at \_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

IT IS SO ORDERED.

Board Member K. M. Hennessey abstained.

I, Dorothy Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the \_\_\_\_\_ day of \_\_\_\_\_, 1996, by a vote of \_\_\_\_\_.

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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board