WEST VIRGINIA

SECRETARY OF STATE

KEN HECHLER

ADMINISTRATIVE LAW DIVISION

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OFFICE OF SECRETARY OF STATE

NOTICE OF AGENCY APPROVAL OF A PROPOSED RULE AND FILING WITH THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

AGENCY: WV Air Pollution Control Commission TITLE NUMBER: 45CSR21

CITE AUTHORITY Chapter 16, Article 20, Section 5

AMENDMENT TO AN EXISTING RULE: YES____ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 45CSR21

TITLE OF RULE BEING PROPOSED: "Regulations to Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds"

THE ABOVE PROPOSED LEGISLATIVE RULE HAVING GONE TO A PUBLIC HEARING OR A PUBLIC COMMENT PERIOD IS HEREBY APPROVED BY THE PROMULGATING AGENCY FOR FILING WITH THE SECRETARY OF STATE AND THE LEGISLATIVE RULE MAKING REVIEW COMMITTEE FOR THEIR REVIEW.

RECEIVED

DEC 18 1991

Legislative Rule Making Review Committee

G. Dale Farley
Director

DATE: December 18, 1991

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: G. DALE FARLEY
DIRECTOR

LEGISLATIVE RULE TITLE: 45CSR21 - "Regulations to Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds"

1. Authorizing statute(s) citation Chapter 16, Article 20, Section 5

2. a. Date filed in State Register with Notice of Hearing:

July 15, 1991

b. What other notice, including advertising, did you give of the hearing?

Notice of Public Hearing was provided in each of ten (10) air quality control regions.

c. Date of hearing(s): September 12, 1991

d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.

Attached X No comments received

e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing: (be exact)

December 18, 1991

f. Name and phone number of agency person to contact for additional information:

G. Dale Farley, Director (348-2275)

West Virginia Air Pollution Control Commission

1558 Washington Street, East, Charleston, WV 25311

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

a. Give the date upon which you filed in the State Register a notice of the time and place of a hearing for the taking of evidence and a general description of the issues to be decided.

N/A

b. Date of hearing: N/A

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefor?

N/A

d. Attach findings and determinations and reasons:

Attached N/A

West Virginia

DEPARTMENT OF COMMERCE,
LABOR & ENVIRONMENTAL RESOURCES
OFFICE OF THE SECRETARY

State Capitol | Charleston, West Virginia 25305 | 304/348-3255

July 8, 1991

Ms. Judy D. Cooper
Director, Administrative Law Division
Office of Secretary of State
Building 1, Suite 157-K
Capitol Complex
Charleston, West Virginia 25305

Dear Ms. Cooper:

I am herein authorizing the Air Pollution Control Commission to proceed with the rule-making process for the following proposed rules or rule revisions:

Regulation 14 - "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants for the Prevention of Significant Deterioration".

Regulation 21 - "Regulations to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds".

Since these rules are necessitated by federal Clean Air Act requirements with mandatory 1992 deadlines they may be enacted under appropriate emergency rule-making provisions by the Air Pollution Control Commission.

Sincerely yours,

John M. Ranson
Cabinet Secretary
Department of Commerce, Labor
& Environmental Resources

DF/tlm

cc: G. Dale Farley
Secretary, WVAPCC

WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #1

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1991 JUL 15 AM 11:30
OFFICE OF WEST VIRGINIA SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: WV Air Pollution Control Commission TITLE NUMBER: 45CSR21

RULE TYPE: Legislative ; CITE AUTHORITY Chapter 16, Article 20, Section 5

AMENDMENT TO AN EXISTING RULE: YES___ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 45CSR21

TITLE OF RULE BEING PROPOSED: "Regulations to Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds"

DATE OF PUBLIC HEARING: September 12, 1991 TIME: 9:00 a.m.

LOCATION OF PUBLIC HEARING: Conference Room
WV Air Pollution Control Commission
1558 Washington Street, East
Charleston, WV 25311

COMMENTS LIMITED TO: ORAL___, WRITTEN___, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: same as above.

The Department requests that persons wishing to make comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

The issues to be heard shall be limited to the proposed rule.

ATTACH A **BRIEF** SUMMARY OF YOUR PROPOSAL

G. Dale Farley, Director

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

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1991 JUL 15 PM 4:09

OFFICE OF WEST VIRGINIA SECRETARY OF STATE

Rule Title: Chapter 16-20, Series 21 - "Regulations to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds"

Type of Rule: X Legislative _____ Interpretive _____ Procedural

Agency WVAPCC Address 1558 Washington St., East Charleston, WV 25311

1. Effect of Proposed Rule	ANNUAL Increase	ANNUAL Decrease	FISCAL YEAR Current	FISCAL YEAR Next	FISCAL YEAR Thereafter
Estimated Total Cost	$ 80,800	$ -0-	$ 39,400	$ 118,200	$ 80,800
Personal Services	78,800		38,400	115,200	78,800
Current Expense (Travel/Training)	2,000		1,000	3,000	2,000
Repairs and Alterations					
Equipment					
Other					

2. Explanation of above estimates:

For the "current" year proposed rule 45CSR21 would require one man-year (engineer) to review technical documents relating to RACT requirements (see below). The "next" fiscal year would require approximately three staff engineers to: develop reporting forms and analyze the data; evaluate proposed compliance programs for affected sources; and monitor these compliance programs. Subsequent years' effort would require approximately two man-years to monitor compliance of the affected facilities.

3. Objectives of these rules:

To adopt rules requiring Reasonable Available Control Technology (RACT) standards for sources that emit volatile organic compounds (VOCs) in the "moderate" ozone nonattainment counties of Wood, Kanawha, Putnam, Wayne, and Cabell.

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government.

There should be no economic impact on state government other than that listed in No. 1 and No. 2.

B. Economic Impact on Political Subdivisions; Specific Industries; Specific groups of citizens.

Specific industrial facilities affected by this proposed rule are listed in the rule summary. There is no expected economic impact on political subdivisions or specific groups of citizens.

C. Economic Impact on Citizens/Public at Large.

There is no direct economic impact expected on citizens/public at large.

Date: July 15, 1991

Signature of Agency Head or Authorized Representative

Robert L. Weser

ROBERT L. WESER, Chief, Enforcement and Permits Section

[PROPOSED]

45CSR21

REGULATIONS TO PREVENT AND CONTROL AIR POLLUTION FROM THE EMISSION OF VOLATILE ORGANIC COMPOUNDS

SUMMARY

Section 182(b)(2) of the Clean Air Act Amendments of 1990 (CAAA) requires states with "moderate" ozone nonattainment areas to adopt rules requiring Reasonable Available Control Technology (RACT) standards for stationary sources that emit volatile organic compounds (VOCs). The counties of Kanawha, Putnam, Cabell, Wayne, and Wood have been designated as "moderate" ozone nonattainment areas based on monitored exceedances of the ozone standards.

Proposed rule 45CSR21 adopts RACT standards for those counties and repeals and replaces existing legislative rules 45CSR21, 45CSR23, and 45CSR24.

West Virginia is required to adopt these standards for the aforementioned counties and incorporate the rule into the State Implementation Plan (SIP) by November 15, 1992.

The following is a listing of stationary source categories that will be affected by this proposed rule:

- Coating Operations, including coating of automobiles and light-duty trucks, cans, coils, paper, fabric, vinyl, metal furniture, large appliances, magnet wire, miscellaneous metal parts and products, and flat wood paneling;
- Gasoline Marketing Facilities, including bulk gasoline plants, bulk gasoline terminals, gasoline dispensing facilities (Stage I control), and gasoline tank truck leaks;
- Petroleum Refinery Sources and Equipment Leaks;
- Petroleum Liquid Storage in External Floating Roof Tanks and Fixed Roof Tanks;
- Natural Gas/Gasoline Processing Equipment Leaks;
- Solvent Metal Cleaning;
- Cutback and Emulsified Asphalt;
- Manufacture of Synthesized Pharmaceutical Products;

- Rubber Tire Manufacturing;
- Graphic Arts; including Rotogravure and Flexographic Printing Presses;
- Petroleum Solvent and Perchloroethylene Dry Cleaning;
- SOCMI Polymer and Resin Manufacturing Equipment Leaks;
- Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins; and
- SOCMI Air Oxidation Processes.

In addition to these specific source categories, this regulation will establish housekeeping procedures to reduce the amount of VOC that is allowed to evaporate at a facility due to handling, storage, and disposal of VOC or VOC-containing material; and would require major (100 tons per year or greater) sources of VOC emissions not listed above to achieve an overall VOC emission reduction of 81 percent or request an alternative control program accompanied by a demonstration of the technical or economic infeasibility of more stringent methods.

ERRATA

CHANGES TO REGULATION 21
(45CSR21)

"Regulations To Prevent And Control Air Pollution
From The Emission Of Volatile Organic Compounds"

Page 4, Section 2.
Added definition 2.26. "Excess emissions"

Page 6, Section 2.
Added definition 2.43. "Modification" or "Modified"

Page 8. Section 2.
Deleted definition 2.60. "Shutdown"

Page 11. Section 3.4.
Added new section 3.4.b. concerning once-in/always-in provision
Added new section 3.6. concerning alternative control plan

Page 12, Section 3.4.
Added new section 3.7. concerning exemption from once-in/always-in provision

Page 14, Section 4.2.b.3.
Changed "4.2.a.2." to "4.2.a.4."

Page 20, Section 5.1.
Changed "six months" to "one year"

Page 21, Section 5.3.a.
Added "pursuant to the procedures in sections 41. and 44."

Page 21, Section 5.3.b.1
Deleted "continuous"

Page 24, Section 7.
Added new section 7.3. concerning circumvention

Page 25. Section 8.
Revised section to limit applicability to coating sources

Page 25. Section 8.1.
Changed "5 kg (11 lb)" to "6.8 kg (15 lb)" and moved in order to specify evaporation (of 6.8 kg)

Page 26. Section 9.1.
Changed "60" to "180" (days)
Added "certification" (compliance)
Deleted language which limited certain extended compliance programs to two years

Page 26, Section 9.1.
Deleted major stationary source from"[NOTE...]"

Page 26, Section 9.3
Added additional circumstance for variance (necessary repairs)

Pages 28, Sections 10.1.d.
32, 11.1.b.
35, 12.1.b.
37, 13.1.b.
39, 14.1.b.
41, 15.1.b.
43, 16.1.b.
45, 17.1.d.
48, 18.1.b.
51, 19.1.d.
55, 20.1.d.
65, 21.1.b.2.
74, 23.1.c.
94, 29.1.d.
127, 34.1.a.
138, 35.1.b.
158, 38.1.c.
184, 40.1.d.
Deleted once-in/always-in provision

Pages 30, Sections 10.5.c.
34, 11.5.c.
36, 12.5.c.
38, 13.5.c.
40, 14.5.c.
42, 15.5.c.
44, 16.5.c.
46, 17.5.c.
49, 18.5.c.
53, 19.5.c.
Changed "43.3." to "43.2."

Page 31, Section 10.8.b.
Changed "source" to "facility"

Pages 67, Sections 21.4.
75, 23.3.
77, 24.5.a.
77, 24.5.d.
85, 26.10.a.
Deleted "immediately"

Page 82, Section 26.4.f.
Added provision for alternative leak identifier system

Page 86, Section 26.10.c.6.
Added "unit" to process (unit) shutdown

Page 96, Section 29.2.m.
Changed "paragraph (i)(2)" to "section 29.9.b."

Page 97, Section 29.4.e.
Added provision for alternative leak identifier system

Page 99, Section 29.9.b.
Changed "1" to "10" percent

Page 101, Section 29.10.c.6.
Added "unit" to process (unit) shutdown

Page 109, Section 30.6.c.
Changed "30.3.c.1.B. or 30.3.c.1.C." to "30.3.c.2.B. or 30.3.c.2.C."

Page 150, Section 37.1.a.1.c.
Changed "37.8.b.1. and 37.8.b.2." to "37.1.a.1.A. and 37.1.a.1.B."

Page 150, Section 37.1.b.
Changed "facility" to "process unit"

Page 151, Section 37.1.c.
Added section 37.1.c.5. concerning additional exemption for pumps and valves in heavy liquid service

Page 151, Section 37.2.f.
Changed "paragraph (a)(1)(ii)" to "section 37.1.a.1."

Page 153, Section 37.4.e.
Added provision for alternative leak identifier system

Page 156, Section 37.10.c.6.
Added "unit" to process (unit) shutdown

Page 179, Section 39.6.
Deleted "immediately"

Page 184, Section 40.1.a.
Added language for clarification of applicability

Page 184, Section 40.1.e.
Deleted "control"
Added exemption for "surface impoundments, pits, and boilers, industrial furnaces, and incinerators with destruction efficiency of 95 percent or greater"

Page 184, Section 40.2.
Deleted "any source at"

Page 184, Section 40.2.a.
Changed "in" to "from"
Added "as determined by 1990 base year emissions"

Page 185, Section 40.4.b.2.
Added "made" to not (made) available

Page 186, Section 40.6.b.
Deleted "immediately"

Page 187, Section 41.2.d.2.
Changed "15" to "30" (days)

Page 187, Section 41.2.d.3.
Changed "30" to "60" (days)

Page 189, Section 41.5.
Changed "45" to "60" (days)

Page 196, Section 44.1.b.3.
Changed "input" to "input to the process"

Page 199, Section 44.2.b.1.
Deleted "continuous" (monitoring)

Page 199, Section 44.2.b.1.A.
Added "Continuous monitoring of the"

Page 199, Section 44.2.b.1.B.
Added "Continuous monitoring of the"
Deleted "rise"
Deleted "the catalyst bed"
Changed "across" to "after"

Page 200, Section 44.2.b.1.C.
Changed entire section

Page 202, Section 45.8.
Changed "twice" to "once"

Page 203, Section 46.1.c.
Changed "less than 10 percent" to "10 percent or less"

Page 210, Section 47.8.b.4.
Changed "paragraph (g)(4)" to "section 47.7.d."

Page 211, Section 47.10.b.1.
Changed "paragraph (f)" to "section 47.6."

Renumbered sections and pages as required.

Regulation was amended as a result of corrections by WVAPCC and comments from industry.

[PROPOSED]
45CSR21

TITLE 45
LEGISLATIVE RULES
WEST VIRGINIA AIR POLLUTION CONTROL COMMISSION

SERIES 21
REGULATIONS TO PREVENT AND CONTROL AIR POLLUTION FROM THE EMISSION OF VOLATILE ORGANIC COMPOUNDS

Table of Contents

[PROPOSED]
45CSR21

TITLE 45
LEGISLATIVE RULES
WEST VIRGINIA AIR POLLUTION CONTROL COMMISSION

SERIES 21
REGULATIONS TO PREVENT AND CONTROL AIR POLLUTION
FROM THE EMISSION OF VOLATILE ORGANIC COMPOUNDS

§45-21-1. General.

1.1. Scope. -- It is the intent of the commission that all persons engaged in the manufacture, mixing, storage, use, or application of volatile organic compounds control the emission of volatile organic compounds through the application of reasonably available control technology. This regulation applies to sources located in Putnam County, Kanawha County, Cabell County, Wayne County, and Wood County.

1.2. Authority. -- W.V. Code §16-20-5.

1.3. Filing Date. --

1.4. Effective Date. --

1.5. Repeal of former rules. -- This legislative rule repeals and replaces WV 45CSR21 "Regulations To Prevent And Control Air Pollution From The Emission Of Volatile Organic Compounds From The Storage Of Petroleum Liquids In Fixed Roof Tanks", WV 45CSR23 "Regulations To Prevent And Control Air Pollution From The Emission Of Volatile Organic Compounds From Bulk Gasoline Terminals", and WV 45CSR24 "Regulations To Prevent And Control Air Pollution From The Emission Of Volatile Organic Compounds From Petroleum Refinery Sources", all three of which were filed August 10, 1990 and effective May 6, 1991.

§45-21-2. Definitions.

For the purpose of this regulation, the following definitions shall apply:

2.1. "Actual emissions" means the quantity of volatile organic compounds (VOCs) emitted from a source during a particular time period.

2.2. "Air pollution", 'statutory air pollution' has the meaning ascribed to it in article twenty, chapter sixteen, of the W.V. Code, as amended.

2.3. "Ambient air" means that portion of the atmosphere, external to buildings, to which the general public has access.

2.4. "As applied" means including dilution solvents added before application of the coating.

2.5. "Bulk gasoline plant" means a gasoline storage and distribution facility with an average daily throughput of 76,000 liters (L) (20,000 gallons [gal]) of gasoline or less on a 30-day rolling average.

2.6. "Bulk gasoline terminal" means a gasoline storage facility that receives gasoline from refineries, delivers gasoline to bulk gasoline plants or to commercial or retail accounts, and has a daily throughput of more than 76,000 liters (20,000 gallons) of gasoline on a 30-day rolling average.

2.7. "Capture efficiency" means the weight per unit time of VOC entering a capture system and delivered to a control device divided by the weight per unit time of total VOC generated by a source of VOC, expressed as a percentage.

2.8. "Capture system" means all equipment (including, but not limited to, hoods, ducts, fans, booths, ovens, dryers, etc.) that contains, collects, and transports an air pollutant to a control device.

2.9. "Carbon adsorber" means an add-on control device which uses activated carbon to adsorb volatile organic compounds from a gas stream.

2.10. "Carbon adsorption system" means a carbon adsorber with an inlet and outlet for exhaust gases and a system to regenerate the saturated adsorbent.

2.11. "Coating" means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealants, adhesives, inks, maskants, and temporary protective coatings.

2.12. "Coating line" means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating line ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or a flashoff area in order to be included in this definition. This definition does not apply to web coating.

2.13. "Commission" means the West Virginia Air Pollution Control Commission.

2.14. "Condensate" means volatile organic compound (VOC) liquid separated from natural gas, that condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

2.15. "Condenser" means any heat transfer device used to liquify vapors by removing their latent heats of vaporization. Such devices include, but are not limited to, shell and tube, coil, surface, or contact condensers.

2.16. "Construction" means on-site fabrication, erection, or installation of a source, air pollution control or monitoring equipment, or a facility.

2.17. "Continuous vapor control system" means a vapor control system that treats vapors displaced from tanks during filling on a demand basis without intermediate accumulation.

2.18. "Control device" means equipment (such as an incinerator or carbon adsorber) used to reduce, by destruction or removal, the amount of air pollutant(s) in an air stream prior to discharge to the ambient air.

2.19. "Control system" means a combination of one or more capture system(s) and control device(s) working in concert to reduce discharges of pollutants to the ambient air.

2.20. "Crude oil" means a naturally occurring mixture that consists of hydrocarbons and/or sulfur, nitrogen, and/or oxygen derivatives of hydrocarbons and that is liquid at standard conditions.

2.21. "Day" means a period of 24 consecutive hours beginning at midnight local time, or beginning at a time consistent with a facility's operating schedule.

2.22. "Destruction or removal efficiency" means the amount of VOC destroyed or removed by a control device expressed as a percent of the total amount of VOC entering the device.

2.23. "Director" means the director of the West Virginia Air Pollution

Control Commission or his or her designated representative.

2.24. "Double block-and-bleed system" means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

2.25. "Emission" means the release or discharge, whether directly or indirectly, of volatile organic compounds into the ambient air.

2.26. "Excess emissions" means those emissions in excess of any requirement, standard, or numerical emission limit specified in this regulation.

2.27. "External floating roof" means a cover over an open-top storage tank consisting of a double deck or pontoon single deck that rests upon and is supported by the volatile organic liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

2.28. "Facility" means all of the pollutant-emitting activities that are located on one or more contiguous or adjacent properties, and are under the control of the same person (or person under common control).

2.29. "First attempt at repair" means to take rapid action for the purpose of stopping or reducing leakage of volatile organic compounds to the atmosphere using best practices.

2.30. "Flashoff area" means the space between the coating application area and the oven.

2.31. "Gasoline" means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kiloPascals (kPa) (8.15 inches of Mercury [in Hg]) or greater that is used as a fuel for internal combustion engines.

2.32. "Gasoline dispensing facility" means any site where gasoline is transferred from a stationary storage tank to a motor vehicle gasoline tank used to provide fuel to the engine of that motor vehicle.

2.33. "Gasoline tank truck" means any truck or trailer equipped with a storage tank that is used for the transport of gasoline or vapor from a source of supply to a stationary storage tank at a gasoline dispensing facility, bulk gasoline plant, or bulk gasoline terminal.

2.34. "Incinerator" means a combustion apparatus in which solid, semisolid, liquid, or gaseous combustible wastes are ignited and burned and from which the solid and gaseous residues contain little or no combustible material.

2.35. "Intermittent vapor control system" means a vapor control system that employs an intermediate vapor holder to accumulate vapors displaced from tanks during filling. The control device treats the accumulated vapors only during automatically controlled cycles.

2.36. "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.

2.37. "Leak" means a VOC emission indicated by an instrument calibrated according to Method 21 of 40 CFR Part 60, Appendix A using zero air (less than 10 parts per million [ppm] of hydrocarbon in air) and a mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

2.38. "Lease custody transfer" means the transfer of produced crude oil or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

2.39. "Loading rack" means an aggregation or combination of gasoline loading equipment arranged so that all loading outlets in the combination can be connected to a tank truck or trailer parked in a specified loading space.

2.40. "Lower explosive limit" (also denoted as LEL) means the concentration of a compound in air below which a flame will not propagate if the mixture is ignited.

2.41. "Maximum theoretical emissions" means the quantity of VOC that theoretically could be emitted by a source without control devices based on the design capacity or maximum production capacity of the source and 8,760 hours of operation per year. The design capacity or maximum production capacity includes use of coatings with the highest VOC content used in practice by the source for the two years preceding the effective date of this rule.

2.42. "Maximum true vapor pressure" means the equilibrium partial pressure exerted by a stored liquid at the temperature equal to: (1) for liquids stored above or below the ambient temperature, the highest calendar-month average of the liquid storage temperature, or (2) for liquids stored at the ambient temperature, the local maximum monthly average temperature as reported by the National Weather Service. This pressure shall be determined:

a. In accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss From External Floating Roof Tanks";

b. By using standard reference texts;

c. By ASTM D2879-83; or

d. By any other method approved by the U.S. EPA.

2.43. "Modification" or "Modified" means any physical change or change in a source which increases its potential to emit volatile oraganic compounds.

2.44. "Open-ended valve or line" means any valve, except a safety relief valve, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

2.45. "Organic compound" means a chemical compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

2.46. "Oven" means a chamber within which heat is used to bake, cure, polymerize, and/or dry a coating.

2.47. "Overall emission reduction efficiency" means the weight per unit time of VOC removed or destroyed by a control device divided by the weight per unit time of VOC generated by a source, expressed as a percentage. The overall emission reduction efficiency is the product of the capture efficiency and the control device destruction or removal efficiency.

2.48. "Owner or operator" means any person who owns, leases, controls, operates, or supervises a facility, a source, or air pollution control or monitoring equipment.

2.49. "Person" means any and all persons, natural or artificial, including any municipal, public or private corporation organized or existing under the laws of this or any other state or country, and any firm, partnership, or association of whatever nature.

2.50. "Petroleum" means crude oil and the oils derived from tar sands, shale, and coal.

2.51. "Petroleum liquid" means crude oil, condensate, and any finished or intermediate product manufactured or extracted at a petroleum refinery, but not including Nos. 2 through 6 fuel oils as specified in ASTM D396-78; gas turbine fuel oils Nos. 2-GT through 4-GT as specified in ASTM D2880-78; or diesel fuel oils Nos. 2-d and 4-D, as specified in ASTM D975-78.

2.52. "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through the redistillation, cracking, or reforming of unfinished petroleum derivatives.

2.53. "Plastisol" means a coating made of a mixture of finely divided resin and a plasticizer. Plastisol is applied as a thick gel that solidifies when heated.

2.54. "Pressure release" means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

2.55. "Prime coat" means the first of two or more coatings applied to a surface.

2.56. "Process unit shutdown" means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

2.57. "Reasonably Available Control Technology" (also denoted as RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. It may require technology that has been applied to similar, but not necessarily identical, source categories.

2.58. "Reid vapor pressure" means the absolute vapor pressure of volatile crude oil and volatile non-viscous petroleum liquids, except liquified petroleum gases, as determined by American Society for Testing and Materials, D323-72.

2.59. "Repaired" means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 parts per million (ppm) or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.

2.60. "Roll coating" means the application of a coating material to a moving substrate by means of hard rubber, elastomeric, or metal rolls.

2.61. "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is recessed relative to the non-image area, and the coating material is picked up in these recessed areas and is transferred to the substrate.

~~2.60. "Shutdown" means the cessation of operation of a facility or of its emission control or emission monitoring equipment.~~

2.62. "Solvent" means a substance that is liquid at standard conditions and is used to dissolve or dilute another substance; this term includes, but is not limited to, organic materials used as dissolvers, viscosity reducers, degreasing agents, or cleaning agents.

2.63. "Source" means any building, structure, equipment, or installation that directly or indirectly releases or discharges, or has the potential to release or discharge, VOCs into the ambient air.

2.64. "Standard conditions" means a temperature of 20°C (68°F) and pressure of 760 millimeters of Mercury (mm Hg) (29.92 in Hg).

2.65. "Startup" means the setting in operation of a source or of its emission control or emission monitoring equipment.

2.66. "Submerged fill" means the method of filling a gasoline tank truck or storage vessel where product enters within 150 millimeters (mm) (5.9 inches [in]) of the bottom of the tank truck or storage vessel. Bottom filling of tank trucks and storage vessels is included in this definition.

2.67. "Substrate" means the surface onto which a coating is applied or into which a coating is impregnated.

2.68. "Topcoat" means the final coating(s), as applied, in a multiple-coat operation.

2.69. "True vapor pressure" means the equilibrium partial pressure exerted by a volatile organic liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss From Floating Roof Tanks," second edition, February 1980.

2.70. "U.S. EPA" means the United States Environmental Protection Agency.

2.71. "Vapor balance system" means a closed system that allows the transfer or balancing of vapors, displaced during the loading or unloading of gasoline, from the tank being loaded to the tank being unloaded.

2.72. "Vapor collection system" means all piping, seals, hoses, connections, pressure-vacuum vents, and other equipment between the gasoline tank truck and the vapor processing unit and/or the storage tanks and vapor holder.

2.73. "Vapor control system" means a system that limits or prevents release to the atmosphere of organic compounds in the vapors displaced from a tank during the transfer of gasoline.

2.74. "Vapor recovery system" means a vapor gathering system capable of collecting VOC vapors and gases emitted during the operation of any transfer, storage, or process equipment.

2.75. "Vapor-tight" means equipment that allows no loss of vapors. Compliance with vapor-tight requirements can be determined by checking to ensure that the concentration at a potential leak source is not equal to or greater than 100 percent of the lower explosive limit (LEL) when measured with a combustible gas detector, calibrated with propane, at a distance of 2.54 centimeters (cm) (1 inch [in]) from the source.

2.76. "Vapor-tight gasoline tank truck" means a gasoline tank truck that has demonstrated within the 12 preceding months that its product delivery tank will sustain a pressure change of not more than 75 mm (3.0 in) of water within 5 minutes (min) after it is pressurized to 450 mm (18 in) of water; or when evacuated to 150 mm (5.9 in) of water, the same tank will sustain a pressure change of not more than 75 mm (3.0 in) of water within 5 min. This capability is to be demonstrated using the test procedures specified in Method 27 of Appendix A of 40 CFR Part 60.

2.77. "Volatile organic compound" (also denoted as VOC) means any organic compound that participates in atmospheric photochemical reactions. This includes any organic compound other than the following exempt compounds: methane, ethane, methyl chloroform (1,1,1-trichloroethane), CFC-113 (trichlorotrifluoroethane), methylene chloride, CFC-11 (trichlorofluoromethane), CFC-12 (dichlorodifluoromethane), CFC-22 (chlorodifluoromethane), FC-23 (trifluoromethane), CFC-114 (dichlorotetrafluoroethane), CFC-115 (chloropentaflouroethane), HCFC-123 (dichlorotrifluoroethane), HFC-134a (tetrafluoroethane), HCFC-141b (dichlorofluoroethane), HCFC-142b (chlorodifluoroethane), 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124), pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); and perfluorocarbon compounds which fall into these classes--

a. Cyclic, branched, or linear, completely fluorinated alkanes;

b. Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

c. Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

d. Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

Any organic compounds that the U.S. EPA lists in Federal Register notices as being photochemically nonreactive are also included as exempt compounds. For purposes of determining compliance with emission limits, VOC will be measured by the test methods approved by the U.S. EPA. Where such a method also inadvertently measures compounds with negligible photochemical reactivity, an owner or operator may exclude these negligibly reactive compounds when determining compliance with an emissions standard.

2.78. "Web coating line" means all of the coating applicator(s), drying area(s), or oven(s), located between an unwind station and a rewind station, that are used to apply coating onto a continuous strip of substrate (the web). A web coating line need not have a drying oven.

§45-21-3. Applicability.

3.1. All new and modified sources shall meet any applicable State or Federal rules for existing sources.

3.2. Nothing in this regulation shall be construed to exempt new and modified sources from meeting any other applicable State or Federal rules, including new source review requirements.

3.3. This regulation does not apply to any equipment at a facility used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance provided the operation of the equipment is not an integral part of the production process and the total actual VOC emissions from all such equipment at the facility do not exceed 204 kilograms (kg) (450 pounds [lb]) in any calendar month.

3.4. a. Any facility that becomes subject to the provisions of this regulation by exceeding an applicability threshold shall remain subject to these provisions, even if its throughput or emissions later fall below the applicability threshold, except as provided in section 3.7.

b. Any facility that is currently subject to a State or Federal rule imposing control requirements for VOCs promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and will remain subject to these provisions, even if its throughput or emissions have fallen or later fall below the applicability threshold, except as provided in section 3.7.

3.5. The owner or operator of any facility that claims exemption from the provisions of this regulation by reason of meeting the conditions in section 3.3 shall maintain the following records in a readily accessible location for at least 3 years and shall make those records available to the director upon verbal or written request:

a. Records to document the purpose of the equipment for which the exemption is claimed.

b. Records to document the amount of each volatile organic compound (VOC)-containing material used in the equipment each calendar month and the VOC content of each material such that emissions can be determined.

3.6. The owner or operator of a facility or source subject to any control requirement of this regulation may comply with an alternative control plan that has been approved by the commission and the U.S. EPA.

3.7. The owner or operator of a facility subject to this regulation may petition the commission for exemption from the requirements of this regulation upon a showing that such facility no longer has the potential to emit volatile organic compounds. Any exemption granted shall be embodied in a consent order which shall contain terms and conditions necessary to ensure that no volatile organic compound may be emitted from the facility. For federal enforcement purposes, such exemption shall not be effective until approved by the U.S. EPA.

§45-21-4. Compliance Certification, Recordkeeping, and Reporting Procedures for Coating Sources.

4.1. To establish the records required under this section 4., the volatile organic compound (VOC) content of each coating, as applied, and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in sections 42. and 44.

4.2. Requirements for coating sources exempt from emission limitations. -- Any owner or operator of a coating line or operation that is exempt from the emission limitations of sections 10. through 19. because combined VOC emissions from all coating lines and operations at the facility are below the applicability threshold specified in the individual sections of this regulation, before the application of capture systems and control devices, shall comply with the following for each of sections 10. through 19. from which the owner or operator claims an exemption:

a. Certification. -- By one year from the effective date of this regulation, the owner or operator of a facility referenced in section 4.2. shall certify to the director that the facility is exempt by providing the following:

1. Name and location of the facility;

2. Address and telephone number of the person responsible for the facility;

3. A declaration that the facility is exempt from the emission limitations of sections 10. through 19. because combined VOC emissions from all coating lines and operations at the facility are below the applicability threshold before the application of capture systems and control devices; and

4. Calculations of the daily-weighted average that demonstrate that the combined VOC emissions from all coating lines and operations at the facility for a day representative of current maximum production levels are 6.8 kilograms (kg) (15 pounds [lb]) or less before the application of capture systems and control devices. The following equation shall be used to calculate total VOC emissions for that day:

$$T = \sum_{i=1}^{n} A_i B_i$$

where:

T = Total VOC emissions from coating lines and operations at the facility

before the application of capture systems and control devices in units of kg/day (lb/day);

n = Number of different coatings applied on each coating line or each operation at the facility;

i = Subscript denoting an individual coating;

A_i = Mass of VOC per volume of coating (i) (minus water and exempt compounds), as applied, used at the facility in units of kilograms VOC per liter (kg VOC/L) (pounds VOC per gallon [lb VOC/gal]); and

B_i = Volume of coating (i) (minus water and exempt compounds), as applied, used at the facility in units of liters per day (L/day) (gallons per day [gal/day]). The instrument or method by which the owner or operator accurately measured or calculated the volume of each coating, as applied, used shall be described in the certification to the director.

b. Recordkeeping. -- On and after one year from the effective date of this regulation, the owner or operator of a facility referenced in section 4.2. shall collect and record all of the following information each day and maintain the information at the facility for a period of 3 years:

1. The name and identification number of each coating, as applied;

2. The mass of VOC per volume (minus water and exempt compounds) and the volume of coating (i) (minus water and exempt compounds), as applied, used each day; and

3. The total VOC emissions at the facility, as calculated using the equation in section ~~4.2.a.2.~~ 4.2.a.4.

c. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a facility referenced in section 4.2. shall notify the commission of any record showing that combined VOC emissions from all coating lines and operations at the coating facility exceed 6.8 kg (15 lb) on any day, before the application of capture systems and control devices. A copy of such record shall be sent to the director within 30 days after the exceedance occurs.

4.3. Requirements for coating sources using complying coatings. -- Any owner or operator of a coating line or operation subject to the limitations of sections 10.3.a., 11., 12., 13., 14., 15., 16., 17., 18., or 19. and complying by means of the use of complying coatings shall comply with the following:

a. Certification. -- By one year from the effective date of this regulation, or upon startup of a new coating line or operation, or upon changing the

method of compliance for an existing subject coating line or operation from daily-weighted averaging or control devices to the use of complying coatings, the owner or operator of a coating line or operation referenced in section 4.3. shall certify to the director that the coating line or operation is or will be in compliance with the requirements of the applicable section of this regulation on and after one year from the effective date of this regulation, or on and after the initial startup date. Such certification shall include:

1. The name and location of the facility;

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

3. Identification of subject sources;

4. The name and identification number of each coating, as applied, on each coating line or operation;

5. The mass of VOC per volume (minus water and exempt compounds) and the volume of each coating (minus water and exempt compounds), as applied; and

6. The time at which the facility's "day" begins if a time other than midnight local time is used to define a "day".

b. Recordkeeping. -- On and after one year from the effective date of this regulation, or on and after the initial startup date, the owner or operator of a coating line or operation referenced in section 4.3. and complying by the use of complying coatings shall collect and record all of the following information each day for each coating line or operation and maintain the information at the facility for a period of 3 years:

1. The name and identification number of each coating, as applied, on each coating line or operation; and

2. The mass of VOC per volume of each coating (minus water and exempt compounds), as applied, used each day on each coating line or operation.

c. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a subject coating line or operation referenced in section 4.3. shall notify the director in the following instances:

1. Any record showing use of any non-complying coatings shall be reported by sending a copy of such record to the director within 30 days following

that use; and

2. At least 30 calendar days before changing the method of compliance from the use of complying coatings to daily-weighted averaging or control devices, the owner or operator shall comply with all requirements of section 4.4.a. or section 4.5.a., respectively. Upon changing the method of compliance from the use of complying coatings to daily-weighted averaging or control devices, the owner or operator shall comply with all requirements of the section of this regulation applicable to the coating line or operation referenced in section 4.3.

4.4. Requirements for coating sources using daily-weighted averaging. -- Any owner or operator of a coating line or operation subject to the limitations of sections 10.3.a., 11., 12., 13., 14., 15., 16., 17., 18., or 19. and complying by means of daily-weighted averaging on that line or operation shall comply with the following:

a. Certification. -- By one year from the effective date of this regulation, or upon startup of a new coating line or operation, or upon changing the method of compliance for an existing subject coating line or operation from the use of complying coatings or control devices to daily-weighted averaging, the owner or operator of the subject coating line or operation shall certify to the director that the coating line or operation is or will be in compliance with section 4.4. on and after one year from the effective date of this regulation, or on and after the initial startup date. Such certification shall include:

1. The name and location of the facility;

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

3. Identification of subject sources;

4. The name and identification number of each coating line or operation which will comply by means of daily-weighted averaging;

5. The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating (minus water and exempt compounds), as applied, used each day on each coating line or operation;

6. The method by which the owner or operator will create and maintain records each day as required in section 4.4.b.;

7. An example of the format in which the records required in section 4.4.b. will be kept;

8. Calculation of the daily-weighted average, using the procedure in section 43.1., for a day representative of current or projected maximum production levels; and

9. The time at which the facility's "day" begins if a time other than midnight local time is used to define a "day".

b. Recordkeeping. -- On and after one year from the effective date of this regulation, or on and after the initial startup date, the owner or operator of a coating line or operation referenced in section 4.4. and complying by means of daily-weighted averaging shall collect and record all of the following information each day for each coating line or operation and maintain the information at the facility for a period of 3 years:

1. The name and identification number of each coating, as applied, on each coating line or operation;

2. The mass of VOC per volume (minus water and exempt compounds) and the volume of each coating (minus water and exempt compounds), as applied, used each day on each coating line or operation; and

3. The daily-weighted average VOC content of all coatings, as applied, on each coating line or operation calculated according to the procedure in section 43.1.

c. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a subject coating line or operation referenced in section 4.4. shall notify the director in the following instances:

1. Any record showing noncompliance with the applicable daily-weighted average requirements shall be reported by sending a copy of the record to the director within 30 days following the occurrence, except as provided in section 9.3.

2. At least 30 calendar days before changing the method of compliance from daily-weighted averaging to the use of complying coatings or control devices, the owner or operator shall comply with all requirements of section 4.3.a. or section 4.5.a., respectively. Upon changing the method of compliance from daily-weighted averaging to the use of complying coatings or control devices, the owner or operator shall comply with all requirements of the section of this regulation applicable to the coating line or operation referenced in section 4.4. of this section.

4.5. Requirements for coating sources using control devices. -- Any owner

or operator of a coating line or operation subject to the limitations of sections 10., 11., 12., 13., 14., 15., 16., 17., 18., or 19. and complying by means of control devices shall comply with the following:

a. Testing of control equipment. -- By one year from the effective date of this regulation, or upon startup of a new coating line or operation, or upon changing the method of compliance for an existing coating line or operation from the use of complying coatings or daily-weighted averaging to control devices, the owner or operator of the subject coating line or operation shall perform a compliance test. Testing shall be performed pursuant to the procedures in sections 41. through 44. The owner or operator of the subject coating line or operation shall submit to the director the results of all tests and calculations necessary to demonstrate that the subject coating line or operation is or will be in compliance with the applicable section of this regulation on and after one year from the effective date of this regulation, or on and after the initial startup date.

b. Recordkeeping. -- On and after one year from the effective date of this regulation, or on and after the initial startup date, the owner or operator of a coating line or operation referenced in section 4.5. shall collect and record all of the following information each day for each coating line or operation and maintain the information at the facility for a period of 3 years:

1. The name and identification number of each coating used on each coating line or operation;

2. The mass of VOC per unit volume of coating solids, as applied, the volume solids content, as applied, and the volume, as applied, of each coating used each day on each coating line or operation;

3. The maximum VOC content (mass of VOC per unit volume of coating solids, as applied) or the daily-weighted average VOC content (mass of VOC per unit volume of coating solids, as applied) of the coatings used each day on each coating line or operation;

4. The required overall emission reduction efficiency for each day for each coating line or operation as determined in sections 10.5.c., 11.5.c., 12.5.c., 13.5.c., 14.5.c., 15.5.c., 16.5.c., 17.5.c., 18.5.c., or 19.5.c.;

5. The actual overall emission reduction efficiency achieved for each day for each coating line or operation as determined in section 44.3.;

6. Control device monitoring data;

7. A log of operating time for the capture system, control

device, monitoring equipment, and the associated coating line or operation;

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

9. For thermal incinerators, all 3-hour periods of operation in which the average combustion temperature was more than 28°C (50°F) below the average combustion temperature during the most recent performance test that demonstrated that the facility was in compliance;

10. For catalytic incinerators, all 3-hour periods of operation in which the average temperature of the process vent stream immediately before the catalyst bed is more than 28°C (50°F) below the average temperature of the process vent stream during the most recent performance test; and

11. For carbon adsorbers, all 3-hour periods of operation during which the average VOC concentration or reading of organics in the exhaust gases is more than 20 percent greater than the average exhaust gas concentration or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the facility was in compliance.

c. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a subject coating line or operation referenced in section 4.5. shall notify the director in the following instances:

1. Any record showing noncompliance with the applicable requirements for control devices shall be reported by sending a copy of the record to the commission within 30 days following the occurrence, except as provided in section 9.3.

2. At least 30 calendar days before changing the method of compliance from control devices to the use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of section 4.3.a. or section 4.4.a., respectively. Upon changing the method of compliance from control devices to the use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of the section of this regulation applicable to the coating line or operation referenced in section 4.5.

§45-21-5. Compliance Certification, Recordkeeping, and Reporting Requirements for Non-Coating Sources.

5.1. Initial compliance certification. -- The owner or operator of any facility containing sources subject to this section 5. shall submit to the director an initial compliance certification by ~~six-months~~ one year from the effective date of this regulation. The owner or operator of any new facility containing sources that become subject to this section 5. after the effective date of this regulation shall submit an initial compliance certification immediately upon start-up of the facility.

a. The initial compliance certification shall provide as a minimum the following information:

1. The name and location of the facility;

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

3. Identification of subject sources.

b. For each subject source, the initial compliance certification shall also provide as a minimum:

1. The applicable emission limitation, equipment specification, or work practice;

2. The method of compliance;

3. For each source subject to numerical emission limitations, the estimated emissions without control;

4. The control system(s) in use;

5. The design performance efficiency of the control system;

6. For each source subject to numerical emission limitations, the estimated emissions after control;

7. Certification that all subject sources at the facility are in compliance with the applicable emission limitation, equipment specification, or work practice; and

8. The time at which the facility's "day" begins if a time other than midnight local time is used to define a "day".

5.2. Reports of excess emissions. -- Except as provided in section 9.3., the owner or operator of any facility containing sources subject to this section 5. shall, for each occurrence of excess emissions expected to last more than 7 days, within 1 business day of becoming aware of such occurrence, supply the director by letter with the following information:

a. The name and location of the facility;

b. The subject sources that caused the excess emissions;

c. The time and date of first observation of the excess emissions; and

d. The cause and expected duration of the excess emissions.

e. For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and

f. The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

5.3. Requirements for sources using control devices. --

a. Initial compliance certification of control equipment. Testing of control equipment. -- By one year from the effective date of this regulation, or upon startup of a new source, or upon changing the method of compliance for an existing source, the owner or operator of the subject source shall perform all tests pursuant to the procedures in sections 41. and 44. and submit to the director the results of all tests and calculations necessary to demonstrate that the subject source will be in compliance with the applicable section of this regulation on and after one year from the effective date of this regulation, or on and after the initial startup date.

b. Recordkeeping.

1. Each owner or operator of a source subject to this section 5. shall maintain up-to-date, readily accessible ~~continuous~~ records of any equipment operating parameters specified to be monitored in the applicable section of this regulation as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. These records shall be maintained for at least 3 years. The director may at any time require a report of these data. Periods of operation during

which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

A. For thermal incinerators, all 3-hour periods of operation in which the average combustion temperature was more than 28°C (50°F) below the average combustion temperature during the most recent performance test.

B. For catalytic incinerators, all 3-hour periods of operation in which the average temperature of the process vent stream immediately before the catalyst bed is more than 28°C (50°F) below the average temperature of the process vent stream during the most recent performance test.

C. For carbon adsorbers, all 3-hour periods of operation during which the average VOC concentration or reading of organics in the exhaust gases is more than 20 percent greater than the average exhaust gas concentration or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the facility was in compliance.

2. A log of operating time for the capture system, control device, monitoring equipment, and the associated source; and

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

§45-21-6. Requirements for Sources Complying by Use of Control Devices.

6.1. Any owner or operator of a coating line or operation subject to this section 6. shall ensure that:

a. A capture system and control device are operated at all times that the line is in operation, and the owner or operator demonstrates compliance with this section through the applicable coating analysis and capture system and control device efficiency test methods specified in sections 42. and 44.; and

b. The control device is equipped with the applicable monitoring equipment specified in section 44.2., and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

§45-21-7. Circumvention.

7.1. No owner or operator subject to this regulation shall build, erect, install, or use any article, machine, equipment, process, or other method the use of which conceals emissions that would otherwise constitute non-compliance with an applicable regulation.

7.2. Section 7.1. includes, but is not limited to, the use of gaseous diluents to achieve compliance, and the piecemeal carrying out of an operation to avoid coverage by a regulation that applies only to operations larger than a specified size.

7.3. No owner or operator subject to this regulation shall discharge or dispose of VOCs or material containing VOCs to surface impoundments, pits, wastewater treatment facilities, or sewers for the purpose of circumventing any provision or requirement of this regulation.

§45-21-8. Handling, Storage, and Disposal of Volatile Organic Compounds (VOCs).

8.1. No owner or operator of a facility subject to ~~this regulation~~ the requirements of sections 11. through 20. and section 34. shall cause, allow, or permit the disposal ~~of more than 5 kilograms (kg) (11 pounds [lb])~~ of any volatile organic compound (VOC), or of any materials containing ~~more than 5 kg (11 lb) of~~ any VOC, at that facility in any 1 day in a manner that would permit the evaporation of more than 6.8 kilograms (kg) (15 pounds [lb]) of VOC into the ambient air. ~~This provision does not apply to any VOC or material containing VOC that is subject to a VOC standard under this regulation.~~ This provision does not apply to coating sources that are specifically exempt from the emission limita-tions of sections 11. through 20. and section 34.

~~8.2. Section 8.1. includes, but is not limited to, the disposal of VOC from VOC control devices.~~

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

8.3. No owner or operator of a facility subject to this ~~regulation~~ section 8. shall store in open containers spent or fresh VOC to be used for surface preparation, cleanup or coating removal.

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

§45-21-9. Compliance Programs, Registration, Variance, Permits, Enforceability.

9.1. Extended compliance programs and schedules. -- For sources as a result of this regulation that are required to make major process changes and/or major capital expenditures, as determined by the commission, an acceptable program to comply with this regulation shall be developed and submitted to the commission by the owner and/or operator of such source within 60 180 days of the effective date of this regulation. The program shall include the dates for ordering, receiving, installation, and start-up of necessary equipment. All such programs shall be embodied in an order and approved by the commission. ~~No such compliance program shall exceed two years from the effective date of this regulation unless the owner and/or operator can demonstrate to the commission that compliance within such time limit is technically or economically infeasible. If the owner and/or operator can make such a demonstration, the commission may issue an order for additional time for compliance extending to no later than May 31, 1995. All such orders shall be issued only after notice to the public.~~ All such orders shall contain a schedule and timetable for compliance certification, including increments of progress which will require compliance with the applicable requirements as expeditiously as practicable, but not later than May 31, 1995. [NOTE: For federal purposes and for federal enforcement, ~~in the case of any major stationary source,~~ no such order issued by the commission shall be federally approved pursuant to the federal Clean Air Act until the Administrator of the U.S. EPA determines that such order was issued in accordance with these requirements, or within the applicable provisions of the federal Clean Air Act, and ~~in the case of any source other than a major stationary source,~~ any such order issued by the commission shall cease to be federally approved upon a determination by the Administrator of the U.S. EPA that it was not issued in accordance with these requirements or with the applicable provisions of the federal Clean Air Act.]

9.2. Registration. -- Within 30 days after the effective date of this regulation all persons owning and/or operating a source subject to this regulation and not previously registered shall have registered such source(s) with the commission. The information required for registration shall be determined and provided in the manner specified by the director. Registration forms shall be requested from the director by the owner or operator of such source(s).

9.3. Variance. -- If the provisions of this regulation cannot be satisfied due to repairs made as the result of routine maintenance or in response to the unavoidable malfunction of equipment, the director may permit the owner or operator of a source subject to this regulation to continue to operate said source for periods not to exceed 10 days upon specific application to the director. Such application shall be made prior to the making of repairs and, in the case of equipment malfunction, within 24 hours of the equipment malfunction. Where repairs will take in excess of 10 days to complete, additional time periods may be granted by the commission. In cases of major equipment failure, additional time periods may be

granted by the commission provided a corrective program has been submitted by the owner or operator and approved by the commission. During such time periods, the owner or operator shall take all reasonable and practicable steps to minimize VOC emissions.

9.4. Permits. -- After the effective date of this regulation, no person shall construct or modify any source subject to this regulation without first obtaining a permit for such construction or modification pursuant to regulations of the commission.

9.5. Enforceability. -- For the purpose of federal enforceability of the provisions of this regulation, references to the commission and/or director shall also mean the Administrator of the U.S. EPA.

§45-21-10. Automobile and Light-Duty Truck Coating Operations.

10.1. Applicability.

a. This section 10. applies to the following coating operations in an automobile or light-duty truck assembly plant: each prime coat operation, each primer surfacer operation, each topcoat operation, and each final repair operation.

b. Antichip coatings, as applied to automobile and light-duty truck components such as rocker panels, the bottom edge of doors and fenders, and the leading edge of the roof, are considered primer surfacers.

c. Application to metal parts of underbody antichip coatings (e.g., underbody plastisol) and coatings other than prime, primer surfacer, topcoat, and final repair shall be subject to the requirements of section 19. (Miscellaneous Metal Parts).

d. The requirements in section 10.3. do not apply to automobile and light-duty truck assembly plants whose plant-wide, actual emissions without control devices are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 10.7.a. ~~Any facility that becomes subject to all of the provisions of this section 10. by exceeding this applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

10.2. Definitions. -- As used in this section 10., all terms not defined herein shall have the meaning given them in section 2.

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

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

c. "Automobile and light-duty truck body" means the exterior surface of an automobile or light-duty truck including, but not limited to, hoods, fenders, cargo boxes, doors, and grill opening panels.

d. "Final repair operation" means the application area(s), flashoff area(s), and oven(s) used to apply and dry or cure coatings that are used to repair topcoat on fully assembled automobiles or light-duty truck bodies from a single assembly line.

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

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

g. "Primer surfacer operation" means the application area(s), flashoff area(s) and oven(s) that are used to apply and dry or cure a primer surfacer on components of automobile and light-duty truck bodies on a single assembly line. The primer surfacer coat is also referred to as the "guidecoat".

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

10.3. Standards.

a. No owner or operator of an automobile or light-duty truck prime, primer surfacer, or final repair operation subject to this section 10. shall cause or allow the application of any coating on that operation with VOC content, as applied, that exceeds the following emission limits:

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

2. 0.58 kg/L (2.8 lb/gal) of coating, minus water and exempt compounds, as applied, from any final repair operation.

b. No owner or operator of an automobile or light-duty truck topcoat operation subject to this section 10. shall cause or allow on any day emissions which exceed 1.8 kg/L (15.1 lb/gal) of solids deposited.

c. As an alternative to compliance with the emission limits in section 10.3.a., an owner or operator may meet the requirements of section 10.4. or section 10.5.

10.4. Daily-weighted average limitation. -- No owner or operator subject to this section 10. shall apply coatings in any prime, primer surfacer, or final repair operation, during any day, whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 43.1., exceeds the applicable emission limits in section 10.3.a.

10.5. Control devices. -- An owner or operator subject to this section 10. shall comply with the applicable emission limit for prime, primer surfacer, or final repair operations by:

a. Installing and operating a capture system on that operation;

b. Installing and operating a control device on that operation;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

10.6. Test methods.

a. The test methods found in sections 41. through 44. shall be used to determine compliance with sections 10.3.a. and 10.3.c.

b. An owner or operator shall use the "Protocol for Determining the Daily VOC Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA 450/3-88-018, December 1988, to determine compliance with section 10.3.b.

10.7. Recordkeeping and reporting for prime coat and final repair operations.

a. An owner or operator of an automobile or light-duty truck coating operation that is exempt from the emission limitations in section 10.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of an automobile or light-duty truck coating operation subject to this section 10. and complying with section 10.3.a. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of an automobile or light-duty truck coating operation subject to this section 10. and complying with section 10.3.a. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of an automobile or light-duty truck coating

operation subject to this section 10. and complying with section 10.3.a. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

10.8. Reporting and recordkeeping for topcoat and primer surface operations.

a. An owner or operator of an automobile or light-duty truck coating operation subject to this section 10. and complying with section 10.3.b. shall comply with the following requirements:

1. At least 180 days prior to the initial compliance date, the owner or operator of a coating operation subject to the topcoat limit shall submit to the director a detailed proposal specifying the method of demonstrating how the compliance test will be conducted according to the topcoat protocol.

2. The proposal shall include a comprehensive plan (including a rationale) for determining the transfer efficiency at each booth through the use of in-plant or pilot testing; the selection of coatings to be tested (for the purpose of determining transfer efficiency) including the rationale for coating groupings; and a method for tracking coating usage during the transfer efficiency test.

3. Upon approval by the director and the U.S. EPA, the owner or operator may proceed with the compliance demonstration.

b. The owner or operator shall maintain at the ~~source~~ facility for a period of 3 years all test results, data, and calculations used to determine VOC emissions from each topcoat and each primer surfacer operation according to the "Protocol for Determining the Daily VOC Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA 450/3-88-018, December 1988.

c. If control devices are used to control emissions from an automobile or light-duty truck topcat or primer surfacer operation, the owner or operator shall maintain records according to sections 4.5.b.6. through 4.5.b.11.

d. Any instance of noncompliance with the emission limit in section 10.3.b. shall be reported to the director within 60 calendar days.

§45-21-11. Can Coating.

11.1. Applicability.

a. This section 11. applies to any can coating line used to apply the following coatings: sheet base coat, exterior base coat, interior body spray coat, overvarnish, side seam spray coat, exterior end coat, and end sealing compound coat.

b. The emission limits of this section 11. do not apply to coating lines within any facility whose actual emissions without control devices from all can coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 11.7.a. ~~Any facility that becomes subject to the provisions of this section 11. by exceeding the applicability threshold shall remain subject to these provisions, even if its emissions later fall below the applicability threshold.~~

11.2. Definitions. -- As used in this section 11., all terms not defined herein shall have the meaning given them in section 2.

a. "Can" means any cylindrical single walled container, with or without a top, cover, spout, and/or handle, that is manufactured from metal sheets thinner than 29 gauge (0.0141 inches [in]) and into which solid or liquid materials are packaged.

b. "Can coating line" means a coating line in which any coating is applied onto the surface of cans or can components.

c. "End sealing compound coat" means a compound applied onto can ends that functions as a gasket when the end is assembled onto the can.

d. "Exterior base coat" means a coating applied to the exterior of a two-piece can body to provide protection to the metal or to provide background for any lithographic or printing operation.

e. "Interior body spray coat" means a coating applied to the interior of the can body to provide a protective film between the product and the can.

f. "Overvarnish" means a coating applied directly over a design coating or directly over ink to reduce the coefficient of friction, to provide gloss, and to protect the finish against abrasion and corrosion.

g. "Sheet basecoat" means a coating applied to metal in sheet form to serve as either the exterior or interior of two-piece or three-piece can bodies or can ends.

h. "Side-seam spray coat" means a coating applied to the seam of a three-piece can.

i. "Three-piece can" means a can that is made by rolling a rectangular sheet of metal into a cylinder that is soldered, welded, or cemented at the seam and attaching two ends.

j. "Two-piece can" means a can whose body and one end are formed from a shallow cup and to which the other end is later attached.

k. "Two-piece can exterior end coat" means a coating applied by roller coating or spraying to the exterior end of a two-piece can to provide protection to the metal.

11.3. Standards.

a. No owner or operator of a can coating line subject to this section 11. shall cause or allow the application of any coating on that line with VOC content, as applied, that exceeds the limits in sections 11.3.a.1. through 11.3.a.6.

		kg/L	lb/gal[a]
1.	Sheet basecoat and sheet overvarnish	0.34	2.8
2.	Exterior basecoat and overvarnish (two-piece can)	0.34	2.8
3.	Interior body spray coat	0.51	4.2
4.	Two-piece can exterior end coat	0.51	4.2
5.	Side seam spray coat	0.66	5.5
6.	End sealing compound coat	0.44	3.7

[a]VOC content values are expressed in units of mass of VOC (kg, lb) per volume of coating (liter [L], gallon [gal]), minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limits in section 11.3.a., an owner or operator of a can coating line may comply with the requirements of this section 11. by meeting the requirements of section 11.4. or section 11.5.

11.4. Daily-weighted average limitations. -- No owner or operator of a can coating line subject to this section 11. shall apply coatings on that line, during any day, whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 43., exceeds the emission limits in section 11.3.a.

11.5. Control devices. -- An owner or operator of a can coating line subject to this section 11. shall comply with this section 11. by:

a. Installing and operating a capture system on that line;

b. Installing and operating a control device on that line;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

11.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 11.

11.7. Recordkeeping and reporting.

a. An owner or operator of a can coating line that is exempt from the emission limitations in section 11.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a can coating line subject to this section 11. and complying with section 11.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a can coating line subject to this section 11. and complying with section 11.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a can coating line subject to this section 11. and complying with section 11.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-12. Coil Coating.

12.1. Applicability.

a. This section 12. applies to any coil coating operation.

b. This section 12. does not apply to any coating operation within a facility whose actual emissions without control devices from all coil coating operations within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 12.7.a. ~~Any facility that becomes subject to the provisions of this section 12. by exceeding the applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

12.2. Definitions. -- As used in this section 12., all terms not defined herein shall have the meaning given them in section 2.

a. "Coil" means any continuous metal strip with thickness of 0.15 millimeter (mm) (0.006 inch [in]) or more that is packaged in a roll or coil.

b. "Coil coating line" means a web coating line where coating is applied to coil.

c. "Coil coating operation" means a coating application station and its associated flashoff area, drying area, and/or drying oven wherein coating is applied and dried or cured on a coil coating line. A coil coating line may include more than one coil coating operation.

12.3. Standards.

a. No owner or operator of a coil coating operation subject to this section 12. shall cause or allow the application of any coating on that operation with VOC content in excess of 0.31 kilograms per liter (kg/L) (2.6 pounds per gallon [lb/gal]) of coating, minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limit in section 12.3.a., an owner or operator of a coil coating operation may meet the requirements of section 12.4. or section 12.5.

12.4. Daily-weighted average limitation. -- No owner or operator of a coil coating operation subject to this section 12. shall apply coatings on that operation, during any day, whose daily-weighted average VOC content, calculated in accordance

with the procedure specified in section 43., exceeds the emission limit in section 12.3.a.

12.5. Control devices. -- An owner or operator of a coil coating operation subject to this section 12. shall comply with this section 12. by:

a. Installing and operating a capture system on that operation;

b. Installing and operating a control device on that operation;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

12.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 12.

12.7. Recordkeeping and reporting.

a. An owner or operator of a coil coating operation that is exempt from the emission limitations in section 12.3. shall comply with the certification, recordkeeping, and reporting requirements in section 42.;

b. An owner or operator of a coil coating operation subject to this section 12. and complying with section 12.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

c. An owner or operator of a coil coating operation subject to this section 12. and complying with section 12.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a coil coating operation subject to this section 12. and complying with section 12.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-13. Paper Coating

13.1. Applicability.

a. This section 13. applies to any paper coating operation.

b. This section 13. does not apply to any coating operation within a facility whose actual emissions without control devices from all paper coating operations within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 13.7.a. ~~Any facility that becomes subject to the provisions of this section 13. by exceeding the applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

13.2. Definitions. -- As used in this section 13., all terms not defined herein shall have the meaning given them in section 2.

a. "Paper coating line" means a web coating line where coating is applied to paper. Printing presses are not considered paper coating lines. Products produced on a paper coating line include, but are not limited to, adhesive tapes and labels, book covers, post cards, office copier paper, drafting paper, and pressure sensitive tapes. Paper coating lines include, but are not limited to, application by impregnation or saturation or by the use of roll, knife, or rotogravure coating.

b. "Paper coating operation" means a coating application station and its associated flashoff area, drying area, and/or oven wherein coating is applied and dried or cured on a paper coating line. A paper coating line may include more than one paper coating operation.

13.3. Standards.

a. No owner or operator of a paper coating operation subject to this section 13. shall cause, allow, or permit the application of any coating on that operation with VOC content in excess of 0.35 kilograms per liter (kg/L) (2.9 pounds per gallon [lb/gal]) of coating, minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limit in section 13.3.a., an owner or operator of a paper coating operation subject to this section 13. may meet the requirements of section 13.4. or section 13.5.

13.4. Daily-weighted average limitation. -- No owner or operator of a paper coating operation subject to this section 13. shall apply coatings on that operation,

during any day, whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 43., exceeds the emission limit in section 13.3.a.

13.5. Control devices. -- An owner or operator of a paper coating operation subject to this section 13. shall comply with this section 13. by:

a. Installing and operating a capture system on that operation;

b. Installing and operating a control device on that operation;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

13.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 13.

13.7. Recordkeeping and reporting.

a. An owner or operator of a paper coating operation that is exempt from the emission limitations in section 13.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a paper coating operation subject to this section 13. and complying with section 13.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a paper coating operation subject to this section 13. and complying with section 13.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a paper coating operation subject to this section 13. and complying with section 13.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-14. Fabric Coating.

14.1. Applicability.

a. This section 14. applies to any fabric coating operation.

b. This section 14. does not apply to any coating operation within a facility whose actual emissions without control devices from all fabric coating operations within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 14.7.a. ~~Any facility that becomes subject to the provisions of this section 14. by exceeding the applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

14.2. Definitions. -- As used in this section 14., all terms not defined herein shall have the meaning given them in section 2.

a. "Fabric coating line" means a web coating line where coating is applied to fabric. A fabric printing line is not considered a fabric coating line.

b. "Fabric coating operation" means a coating application station and its associated flashoff area, drying area, and/or oven wherein coating is applied and dried or cured in a fabric coating line. A fabric coating line may include more than one fabric coating operation.

14.3. Standards.

a. No owner or operator of a fabric coating operation subject to this section 14. shall cause or allow the application of any coating on that operation with VOC content in excess of 0.35 kilogram per liter (kg/L) (2.9 pounds per gallon [lb/gal]) of coating, minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limit in section 14.3.a., an owner or operator of a fabric coating operation subject to this section 14. may meet the requirements of section 14.4. or section 14.5.

14.4. Daily-weighted average limitation. -- No owner or operator of a fabric coating operation subject to this section 14. shall apply coatings on that operation, during any day, whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 43., exceeds the emission limit in section 14.3.a.

14.5. Control devices. -- An owner or operator of a fabric coating operation subject to this section 14. shall comply with this section 14. by:

a. Installing and operating a capture system on that operation;

b. Installing and operating a control device on that operation;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. of this regulation for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

14.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 14.

14.7. Recordkeeping and reporting.

a. An owner or operator of a fabric coating operation that is exempt from the emission limitations in section 14.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a fabric coating operation subject to this section 14. and complying with section 14.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a fabric coating operation subject to this section 14. and complying with section 14.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a fabric coating operation subject to this section 14. and complying with section 14.5 by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-15. Vinyl Coating.

15.1. Applicability.

a. This section 15. applies to any vinyl coating line.

b. This section 15. does not apply to any coating line within a facility whose actual emissions without control devices from all vinyl coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 15.7.a. ~~Any facility that becomes subject to the provisions of this section 15. by exceeding this applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

15.2. Definitions. -- As used in this section 15., all terms not defined herein shall have the meaning given them in section 2.

"Vinyl coating line" means a web coating line where a decorative, functional, or protective coating is applied to a continuous web of vinyl or vinyl-coated fabric. Lines used for coating and/or printing on vinyl and coating and/or printing on urethane are considered vinyl coating lines.

15.3. Standards.

a. No owner or operator of a vinyl coating line subject to this section 15. shall cause or allow the application of any coating on that line with VOC content in excess of 0.45 kilograms per liter (kg/L) (3.8 pounds per gallon [lb/gal]) of coating, minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limit in section 15.3.a., an owner or operator of a vinyl coating line subject to this section 15. may meet the requirements of section 15.4. or section 15.5.

15.4. Daily-weighted average limitation. -- No owner or operator of a vinyl coating line subject to this section 15. shall apply coatings on any such line, during any day, whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 43., exceeds the emission limit in section 15.3.a.

15.5. Control devices. -- An owner or operator of a vinyl coating line subject to this section 15. shall comply with this section 15. by:

a. Installing and operating a capture system on that line;

b. Installing and operating a control device on that line;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and,

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

15.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 15.

15.7. Recordkeeping and reporting.

a. An owner or operator of a vinyl coating line that is exempt from the emission limitations in section 15.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a vinyl coating line subject to this section 15. and complying with section 15.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a vinyl coating line subject to this section 15. and complying with section 15.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a vinyl coating line subject to this section 15. and complying with section 15.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-16. Coating of Metal Furniture.

16.1. Applicability.

a. This section 16. applies to any metal furniture coating line.

b. This section 16. does not apply to any coating line within a facility whose actual emissions without control devices from all metal furniture coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 16.7.a. ~~Any facility that becomes subject to the provisions of this section 16. by exceeding this applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

16.2. Definitions. -- As used in this section 16., all terms not defined herein shall have the meaning given them in section 2.

a. "Metal furniture" means any furniture piece made of metal or any metal part that will be assembled with other metal, wood, fabric, plastic, or glass parts to form a furniture piece including, but not limited to, tables, chairs, waste baskets, beds, desks, lockers, benches, shelving, file cabinets, and room dividers. This definition shall not apply to the coating of miscellaneous metal parts or products.

b. "Metal furniture coating line" means a coating line in which a protective, decorative, or functional coating is applied onto the surface of metal furniture.

16.3. Standards.

a. No owner or operator of a metal furniture coating line subject to this section 16. shall cause or allow the application of any coating on that line with VOC content in excess of 0.36 kilograms per liter (kg/L) (3.0 pounds per gallon [lb/gal]) of coating, minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limit in section 16.3.a., an owner or operator of a metal furniture coating line may meet the requirements of section 16.4. or section 16.5.

16.4. Daily-weighted average limitation. -- No owner or operator of a metal furniture coating line subject to this section 16. shall apply coatings on that line, during any day, whose daily-weighted average VOC content, calculated in accordance

with the procedure specified in section 43., exceeds the emission limit in section 16.3.a.

16.5. Control devices. -- An owner or operator of a metal furniture coating line subject to this section 16. shall comply with this section 16. by:

a. Installing and operating a capture system on that line;

b. Installing and operating a control device on that line;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

16.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section.

16.7. Recordkeeping and reporting.

a. An owner or operator of a metal furniture coating line that is exempt from the emission limitations in section 16.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a metal furniture coating line subject to this section 16. and complying with section 16.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a metal furniture coating line subject to this section 16. and complying with section 16.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a metal furniture coating line subject to this section 16. and complying with section 16.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-17. Coating of Large Appliances.

17.1. Applicability.

a. This section 17. applies to any large appliance coating line.

b. This section 17. does not apply to:

1. Any coating line within a facility whose actual emissions without control devices from all large appliance coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day; or,

2. The use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 liter (L) (0.25 gallon [gal]) in any one 8-hour period.

c. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 17.7.a.

~~d. Any facility that becomes subject to the provisions of this section 17. by exceeding the applicability thresholds in section 17.1.b. shall remain subject to these provisions even if its emissions or coating volume used later fall below the applicability thresholds.~~

17.2. Definitions. -- As used in this section 17., all terms not defined herein shall have the meaning given them in section 2.

a. "Large appliance" means any residential or commercial washer, dryer, range, refrigerator, freezer, water heater, dishwasher, trash compactor, air conditioner, or other similar products under Standard Industrial Classification Code 363.

b. "Large appliance coating line" means a coating line in which any protective, decorative, or functional coating onto the surface of component metal parts (including, but not limited to, doors, cases, lids, panels, and interior parts) of large appliances.

17.3. Standards.

a. No owner or operator of a large appliance coating line subject to this section 17. shall cause or allow the application of any coating on that line with VOC content in excess of 0.34 kilograms per liter (kg/L) (2.8 pounds per gallon

[lb/gal]) of coating, minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limit in section 17.3.a., an owner or operator of a large appliance coating line subject to this section 17. may meet the requirements of section 17.4. or 17. 5.

17.4. Daily-weighted average limitation. -- No owner or operator of a large appliance coating line subject to this section 17. shall apply coatings on that line, during any day, whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 43., exceeds the emission limit in section 17.3.a.

17.5. Control devices. -- An owner or operator of a large appliance coating line subject to this section 17. shall comply with this section 17. by:

a. Installing and operating a capture system on that line;

b. Installing and operating a control device on that line;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

17.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 17.

17.7. Recordkeeping and reporting.

a. An owner or operator of a large appliance coating line that is exempt from the emission limitations in section 17.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a large appliance coating line subject to this section 17. and complying with section 17.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a large appliance coating line subject to this section 17. and complying with section 17.4. by daily-weighted averaging shall

comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a large appliance coating line subject to this section 17. and complying with section 17.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-18. Coating of Magnet Wire.

18.1. Applicability.

a. This section 18. applies to any magnet wire coating line.

b. This section 18. does not apply to any coating line within a facility whose emissions without control devices from all magnet wire coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 18.7.a. ~~Any facility that becomes subject to the provisions of this section 18. by exceeding this applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

18.2. Definitions. -- As used in this section 18., all terms not defined herein shall have the meaning given them in section 2.

"Magnet wire coating line" means a coating line in which an electrically insulating varnish or enamel is applied onto the surface of wire for use in electrical machinery.

18.3. Standards.

a. No owner or operator of a magnet wire coating line subject to this section 18. shall cause or allow the use of any coating with VOC content in excess of 0.20 kilograms per liter (kg/L) (1.7 pounds per gallon [lb/gal]) of coating, minus water and exempt compounds, as applied.

b. As an alternative to compliance with the emission limit in section 18.3.a., an owner or operator of a magnet wire coating line subject to this section 18. may meet the requirements of section 18.4. or section 18.5.

18.4. Daily-weighted average limitation. -- No owner or operator of a magnet wire coating line subject to this section 18. shall apply coatings on that line, during any day, whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 43., exceeds the emission limit in section 18.3.a.

18.5. Control devices. -- An owner or operator of a magnet wire coating line subject to this section 18. shall comply with this section 18. by:

a. Installing and operating a capture system on that line;

b. Installing and operating a control device on that line;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

18.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 18.

18.7. Recordkeeping and reporting.

a. An owner or operator of a magnet wire coating line that is exempt from the emission limitations in section 18.3. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a magnet wire coating line subject to this section 18. and complying with section 18.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a magnet wire coating line subject to this section 18. and complying with section 18.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a magnet wire coating line subject to this section 18. and complying with section 18.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-19. Coating of Miscellaneous Metal Parts.

19.1. Applicability.

a. This section 19. applies to any miscellaneous metal parts and products coating line.

b. This section 19. does not apply to the coating of the following metal parts and products that are covered by other sections of this regulation:

1. Automobiles and light-duty trucks;

2. Metal cans;

3. Flat metal sheets and strips in the form of rolls or coils;

4. Magnet wire for use in electrical machinery;

5. Metal furniture; and

6. Large appliances.

c. This section 19. does not apply to:

1. Exterior of completely assembled aircraft;

2. Exterior of major aircraft subassemblies, if approved by the commission and the U.S. EPA;

3. Automobile and truck refinishing;

4. Customized top coating of automobiles and trucks, if production is less than 35 vehicles per day;

5. Exterior of completely assembled marine vessels; or

6. Exterior of major marine vessel subassemblies if approved by the commission and the U.S. EPA.

d. The emission limits in this section 19. do not apply to any coating line within a facility whose actual emissions without control devices from all miscellaneous metal part and products coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day. An owner or operator of a facility whose emissions are below this applicability

threshold shall comply with the certification, recordkeeping, and reporting requirements of section 19.7.a. ~~Any facility that becomes subject to the provisions of this section 19. by exceeding this applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

19.2. Definitions. -- As used in this section 19., all terms not defined herein shall have the meaning given them in section 2.

a. "Air-dried coating" means a coating that is dried by the use of air or forced warm air at temperatures up to 90°C (194°F).

b. "Clear coating" means a coating that (1) either lacks color and opacity or is transparent and (2) uses the surface to which it is applied as a reflective base or undertone color.

c. "Drum" means any cylindrical metal shipping container of 13- to 110-gallon capacity.

d. "Extreme environmental conditions" means any of the following: the weather all of the time, temperatures frequently above 95°C (203°F), detergents, abrasive and scouring agents, solvents, corrosive atmospheres, or similar environmental conditions.

e. "Extreme performance coatings" means coatings intended for exposure to extreme environmental conditions.

f. "Miscellaneous metal parts and products coating line" means a coating line in which a coating is applied to any miscellaneous metal parts and products.

g. "Miscellaneous parts and products" means any metal part or metal product, even if attached to or combined with a nonmetal part or product. Miscellaneous metal parts and products include, but are not limited to:

1. Large farm machinery (harvesting, fertilizing and planting machines, tractors, combines, etc.);

2. Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

3. Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

4. Commercial machinery (office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

5. Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

6. Fabricated metal products (metal covered doors, frames, etc.);

7. Any other industrial category that coats metal parts or products under the Standard Industrial Classification Codes of Major Group 33 (primary metal industries), Major Group 34 (fabricated metal products), Major Group 35 (nonelectric machinery), Major Group 36 (electrical machinery), Major Group 37 (transportation equipment), Major Group 38 (miscellaneous instruments), and Major Group 39 (miscellaneous manufacturing industries); and

8. Application of underbody antichip materials (e.g., underbody plastisol) and coating application operations other than prime, primer surfacer, topcoat, and final repair operations at automobile and light-duty truck assembly plants.

h. "Pail" means any cylindrical metal shipping container of 1- to 12-gallon capacity and constructed of 29-gauge and heavier material.

i. "Refinishing" means the repainting of used equipment.

19.3. Standards.

a. No owner or operator of a miscellaneous metal parts and products coating line subject to this section 19. shall cause or allow the application of any coating with VOC content in excess of the emission limits in sections 19.3.a.1. through 19.3.a.5.

		kg/L[a]	lb/gal[a]
1.	Clear coating	0.52	4.3
2.	Steel pail & drum interior coating coating	0.52	4.3
3.	Air-dried coating	0.42	3.5
4.	Extreme performance coating	0.42	3.5
5.	All other coatings	0.36	3.0

[a]VOC content values are expressed in units of mass of VOC (kg, lb) per volume of coating (liter [L], gallon [gal]), minus water and exempt compounds, as applied.

b. If more than one emission limit in section 19.3.a. applies to a specific coating, then the least stringent emission limit shall be applied.

c. As an alternative to compliance with the emission limits in section 19.3.a., an owner or operator of a miscellaneous metal parts and products coating line may meet the requirements of section 19.4. or section 19.5.

19.4. No owner or operator of a miscellaneous metal parts and products coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within section 19.3.a., during the same day (e.g., all coatings used on the line are subject to 0.42 kg/L [3.5 lb/gal]), shall apply coatings on that line during any day whose daily-weighted average VOC content calculated in accordance with the procedure specified in section 43. exceeds the coating VOC content limit corresponding to the category of coating used.

19.5. Control devices. -- An owner or operator of a miscellaneous metal parts and products coating line subject to this section 19. shall comply with this section 19. by:

a. Installing and operating a capture system on that line;

b. Installing and operating a control device on that line;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section ~~43.3.~~ 43.2. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

19.6. Test methods. -- The test methods found in sections 41. through 44. shall be used to determine compliance with this section 19.

19.7. Recordkeeping and reporting.

a. An owner or operator of a miscellaneous metal parts and products

coating line that is exempt from the emission limitations in section 19.3 shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a miscellaneous metal parts and products coating line subject to this section 19. and complying with section 19.3. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

c. An owner or operator of a miscellaneous metal parts and products coating line subject to this section 19. and complying with section 19.4. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

d. An owner or operator of a miscellaneous metal parts and products coating line subject to this section 19. and complying with section 19.5. by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

§45-21-20. Coating of Flat Wood Paneling.

20.1. Applicability.

a. This section 20. applies to all flat wood paneling coating lines.

b. This section 20. does not apply to:

1. Any coating line within any facility whose actual emissions without control devices from all flat wood paneling coating lines within the facility are less than 6.8 kilograms (kg) (15 pounds [lb]) volatile organic compound (VOC) per day; or

2. Class I hardwood panels, particle board used in furniture, insulation board, exterior siding, tileboard, and softwood plywood coating lines.

c. An owner or operator of a facility whose emissions are below the applicability threshold in section 20.1.b.1. shall comply with the certification, recordkeeping, and reporting requirements of section 20.6.

~~d. Any facility that becomes subject to the provisions of this section 20. by exceeding this applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

20.2. Definitions. -- As used in this section 20., all terms not defined herein shall have the meaning given them in section 2.

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

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

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

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

e. "Natural finish hardwood plywood panels" means panels whose

original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

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

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

h. "Tileboard" means paneling that has a colored, waterproof surface coating.

20.3. Standards.

a. No owner or operator of a flat wood paneling coating line subject to this section 20. shall cause or allow VOC emissions from the coating of any flat wood paneling product in excess of the emission limits in sections 20.3.a.1. through 20.3.a.3.

		kg/100 m^{2a}	lb/1,000 ft^{2a}
1.	Printed interior panels	2.9	6.0
2.	Natural finish hardwood plywood panels	5.8	12.0
3.	Class II finish on hardwood panels	4.8	10.0

[a]VOC content values are expressed in units of mass of VOC (kg, lb) per area of surface to which the coating is applied (100 square meters [m^2], 1,000 square feet [ft^2]).

b. As an alternative to compliance with the emission limits in section 20.3.a., an owner or operator of a flat wood paneling coating line may meet the requirements of section 20.4.

20.4. Control devices. -- An owner or operator of a flat wood paneling coating line subject to this section 20. shall comply with this section 20. by:

a. Installing and operating a capture system on that line;

b. Installing and operating a control device on that line;

c. Determining for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in section 20.5.b. for that day or 95 percent; and

d. Demonstrating each day that the overall emission reduction efficiency achieved for that day, as determined in section 44.3., is greater than or equal to the overall emission reduction efficiency required for that day.

20.5. Test methods. -- The test methods found in sections 41., 42., 44. and this section 20.5 shall be used to determine compliance.

a. Daily-weighted average. -- The daily-weighted average VOC content, in units of mass of VOC per area of surface coated, of the coatings used on a day on a flatwood paneling coating line shall be calculated using the following equation:

$$VOC_w = \frac{\sum_{i=1}^{n} V_i \, C_i}{a}$$

where:

VOC_w = The daily-weighted average VOC content of the coatings, as applied, used on a coating line in units of kilograms of VOC per 100 square meters of surface area coated (kg VOC/100 m^2) (pounds of VOC per 1,000 square feet of surface area coated [lb VOC/1,000 ft^2)

n = The number of different coatings, as applied, each day on a coating line;

V_i = The volume of each coating applied each day on a coating line in units of L (gal); and

C_i = The VOC content of each coating, as applied, each day on a coating line in units of kg VOC/L of coating (lb VOC/gal); and

a = Constant = 100 m^2 if using metric units; and
= 1,000 ft^2 if using english units.

b. Calculate the required overall emission reduction efficiency of the control system for the day according to the following equation:

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

where:

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

VOC_a = (1) The maximum VOC content of the coatings, as applied, used each day on a coating line in units of kg VOC/100 m^2 of surface area coated (lb VOC/1,000 ft^2), as determined by the applicable test methods and procedures specified in section 42.; or (2) The daily-weighted average VOC content, as applied, of the coatings used each day on a coating line in units of kg VOC/100 m^2 of surface area coated (lb VOC/1,000 ft^2), as determined by the applicable test methods and procedures specified in section 42. and the procedure in section 20.5.a.; and

S = VOC emission limitation in terms of kg VOC/100 m^2 of surface area coated (lb VOC/1,000 ft^2).

20.6. Recordkeeping and reporting.

a. Requirements for coating sources exempt from emission limitations. -- An owner or operator of a flat wood paneling coating line that is exempt from the emission limitations of section 20.3.a. because combined VOC emissions from all coating lines at the facility are below the applicability threshold specified in section 20.1.b., before the application of capture systems and control devices, shall comply with the following:

1. Certification. -- By one year from the effective date of this regulation, the owner or operator of a facility referenced in section 20.6.a. shall certify to the director that the facility is exempt by providing the following:

A. The name and location of the facility;

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

C. A declaration that the facility is exempt from the emission limitations of section 20.3.a. because combined VOC emissions from all coating lines and at the facility are below the applicability threshold before the application of capture systems and control devices; and

D. Calculations of the daily-weighted average that demonstrate that the combined VOC emissions from all coating lines at the facility for a day representative of current maximum production levels are 6.8 kilograms (kg) (15 pounds [lb]) or less before the application of capture systems and control devices. The following equation shall be used to calculate total VOC emissions for

that day:

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

where:

T = Total VOC emissions from coating lines and operations at the facility before the application of capture systems and control devices in units of kg/day (lb/day);

n = Number of different coatings applied on each coating line or each operation at the facility;

i = Subscript denoting an individual coating;

C = Mass of VOC per area of surface to which the coating is applied in units of kg/100 m^2 (lb/1,000 ft^2);

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

a = Constant = 100 m^2 if using metric units; and
= 1,000 ft^2 if using english units.

2. Recordkeeping. -- On and after one year from the effective date of this regulation, the owner or operator of a facility referenced in section 20.6.a. shall collect and record all of the following information each day and maintain the information at the facility for a period of 3 years:

A. The name and identification number of each coating, as applied;

B. The volume of coating (i) (minus water and exempt compounds), as applied, used each day, and the surface area coated each day; and

C. The total VOC emissions at the facility, as calculated using the equation under section 20.6.a.1.B.

3. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a facility referenced in section 20.6.a. shall notify the director of any record showing that combined VOC emissions from all coating lines and operations at the coating facility exceed 6.8 kg (15 lb) on any day, before the application of capture systems and control devices. A copy of such record shall be sent to the director within 30 days after the exceedance occurs.

b. Requirements for coating sources using complying coatings. -- An owner or operator of a flat wood paneling subject to this section 20. and complying with section 20.3, by means of the use of complying coatings shall comply with the

following:

1. Certification. -- By one year after the effective date of this regulation, or upon startup of a new coating line, or upon changing the method of compliance for an existing subject coating line from daily-weighted averaging or control devices to the use of complying coatings, the owner or operator of a coating line referenced in section 20.3. shall certify to the director that the coating line is or will be in compliance with the requirements of the applicable section of this regulation on and after one year after the effective date of this regulation, or on and after the initial startup date. Such certification shall include:

A. The name and location of the facility;

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

C. Identification of subject sources;

D. The name and identification number of each coating, as applied, on each coating line; and

E. The mass of VOC per area of surface to which the coating is applied in terms of kg/100 m^2 (lb/1,000 ft^2) and the surface area coated.

2. Recordkeeping. -- On and after one year from the effective date of this regulation, or on and after the initial startup date, the owner or operator of a coating line referenced in section 20.6.a. and complying by the use of complying coatings shall collect and record all of the following information each day for each coating line and maintain the information at the facility for a period of 3 years:

A. The name and identification number of each coating, as applied, on each coating line or operation; and

B. The mass of VOC per area of surface to which the coating is applied for each coating used each day on each coating line in terms of kg/100 m^2 (lb/1,000 ft^2).

3. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a flatwood paneling coating line referenced in section 20.6.a. shall notify the director in the following instances:

A. Any record showing use of any non-complying coatings shall be reported by sending a copy of such record to the director within 30 days

following that use; and

B. At least 30 calendar days before changing the method of compliance from the use of complying coatings to daily-weighted averaging or control devices, the owner or operator shall comply with all requirements of section 20.6.c.1. or section 20.6.d.1., respectively. Upon changing the method of compliance from the use of complying coatings to daily-weighted averaging or control devices, the owner or operator shall comply with all requirements of the section of this regulation applicable to the coating line referenced in section 20.6.a.

c. Requirements for coating sources using daily-weighted averaging. -- Any owner or operator of a coating line subject to the limitations of this section 20. and complying by means of daily-weighted averaging on that line shall comply with the following:

1. Certification. -- By one year after the effective date of this regulation, or upon startup of a new flat wood paneling coating line, or upon changing the method of compliance for an existing flat wood paneling coating line from the use of complying coatings or control devices to daily-weighted averaging, the owner or operator of the flat wood paneling coating line shall certify to the director that the coating line or operation is or will be in compliance with section 20.6.c. on and after one year after the effective date of this regulation, or on and after the initial startup date. Such certification shall include:

A. The name and location of the facility;

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

C. Identification of subject sources;

D. The name and identification number of each coating line which will comply by means of daily-weighted averaging;

E. The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating (minus water and exempt compounds), as applied, used each day on each coating line;

F. The method by which the owner or operator will create and maintain records each day as required in section 20.6.c.2.;

G. An example of the format in which the records required in section 20.6.c.2. will be kept; and

H. Calculation of the daily-weighted average, using the procedure in section 20.5.a., for a day representative of current or projected maximum production levels.

2. Recordkeeping. -- On and after one year from the effective date of this regulation, or on and after the initial startup date, the owner or operator of a flat wood paneling coating line referenced in section 20.6.c. and complying by means of daily-weighted averaging shall collect and record all of the following information each day for each coating line and maintain the information at the facility for a period of 3 years:

A. The name and identification number of each coating, as applied, on each coating line;

B. The mass of VOC per volume (minus water and exempt compounds) and the volume of each coating (minus water and exempt compounds), as applied, used each day on each coating line; and

C. The daily-weighted average VOC content of all coatings, as applied, on each coating line calculated according to the procedure in section 20.5.a.

3. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a subject coating line referenced in section 20.6.c. shall notify the director in the following instances:

A. Any record showing noncompliance with the applicable daily-weighted average requirements shall be reported by sending a copy of the record to the director within 30 days following the occurrence, except as provided in section 9.3.

B. At least 30 calendar days before changing the method of compliance from daily-weighted averaging to the use of complying coatings or control devices, the owner or operator shall comply with all requirements of section 20.6.b.1. or section 20.6.d.1., respectively. Upon changing the method of compliance from daily-weighted averaging to the use of complying coatings or control devices, the owner or operator shall comply with all requirements of the section of this regulation applicable to the coating line referenced in section 20.6.c.

d. Requirements for coating sources using control devices. -- Any owner or operator of a flat wood paneling coating line subject to this section 20. and complying with section 20.3. by the use of control devices shall comply with the following:

1. Testing of control equipment. -- By one year from the effective date of this regulation, or upon startup of a new coating line, or upon changing the method of compliance for an existing coating line from the use of complying coatings or daily-weighted averaging to control devices, the owner or operator of the subject coating line shall perform a compliance test. Testing shall be performed pursuant to the procedures in sections 41., 42., 44., and section 20.5. The owner or operator of the subject coating line shall submit to the director the results of all tests and calculations necessary to demonstrate that the subject coating line is or will be in compliance with the applicable section of this regulation on and after one year from the effective date of this regulation, or on and after the initial startup date.

2. Recordkeeping. -- On and after one year from the effective date of this regulation, or on and after the initial startup date, the owner or operator of a coating line referenced in section 20.6.d. shall collect and record all of the following information each day for each coating line and maintain the information at the facility for a period of 3 years:

A. The name and identification number of each coating used on each coating line;

B. The mass of VOC per area of surface to which the coating is applied in terms of kg/100 m^2 (lb/1,000 ft^2), and the surface area coated each day on each coating line;

C. The maximum VOC content (mass of VOC per area of surface to which the coating is applied in terms of kg/100 m^2 [lb/1,000 ft^2]) or the daily-weighted average VOC content (mass of VOC per area of surface to which the coating is applied in terms of kg/100 m^2 [lb/1,000 ft^2]) of the coatings used each day on each coating line;

D. The required overall emission reduction efficiency for each day for each coating line as determined in section 20.4.c.;

E. The actual overall emission reduction efficiency achieved for each day for each coating line as determined in section 44.3.;

F. Control device monitoring data;

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

H. A maintenance log for the capture system, control device, and monitoring equipment detailing all routine and non-routine maintenance

performed including dates and duration of any outages;

I. For thermal incinerators, all 3-hour periods of operation in which the average combustion temperature was more than 28°C (50°F) below the average combustion temperature during the most recent performance test that demonstrated that the facility was in compliance;

J. For catalytic incinerators, all 3-hour periods of operation in which the average temperature of the process vent stream immediately before the catalyst bed is more than 28°C (50°F) below the average temperature of the process vent stream during the most recent performance test that demonstrated that the facility was in compliance; and

K. For carbon adsorbers, all 3-hour periods of operation during which the average VOC concentration or reading of organics in the exhaust gases is more than 20 percent greater than the average exhaust gas concentration or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the facility was in compliance.

3. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a subject coating line referenced in section 20.6.d. shall notify the director in the following instances:

A. Any record showing noncompliance with the applicable requirements for control devices shall be reported by sending a copy of the record to the director within 30 days following the occurrence, except as provided in section 9.3.

B. At least 30 calendar days before changing the method of compliance from control devices to the use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of section 20.6.b.1. or section 20.6.c.1., respectively. Upon changing the method of compliance from control devices to the use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of the section of this regulation applicable to the coating line referenced in section 20.6.d.

§45-21-21. Bulk Gasoline Plants.

21.1. Applicability.

a. This section 21. applies to all unloading, loading, and storage operations at bulk gasoline plants and to any tank truck delivering or receiving gasoline at a bulk gasoline plant.

b. The following are subject only to the requirements of sections 21.2.c.7., 21.2.c.8., and 21.2.c.9.:

1. Any stationary storage tank of 2,082 liters (L) (550 gallons [gal]) capacity or less notwithstanding section 8.; or

2. Any bulk gasoline plant with an average daily throughput of gasoline of less than 15,000 L (4,000 gal) on a 30-day rolling average provided that records are maintained according to the requirements in section 21.4.a. ~~Any plant that becomes subject to all of the provisions of this section 21. by exceeding this applicability threshold shall remain subject to these provisions even if its throughput later falls below the applicability threshold.~~

21.2. Standards.

a. Each bulk gasoline plant subject to this section 21. shall be equipped with a vapor balance system between the gasoline storage vessel and the incoming gasoline tank truck designed to capture and transfer vapors displaced during filling of the gasoline storage vessel. These lines shall be equipped with fittings that are vapor tight and that automatically and immediately close upon disconnection.

b. Each bulk gasoline plant subject to this section 21. shall be equipped with a vapor balance system between the gasoline storage vessel and the outgoing gasoline tank truck designed to capture and transfer vapors displaced during the loading of the gasoline tank truck. The vapor balance system shall be designed to prevent any vapors collected at one loading rack from passing to another loading rack.

c. Each owner or operator of a bulk gasoline plant subject to this section 21. shall act to ensure that the procedures in sections 21.2.c.1. through 21.2.c.9. are followed during all loading, unloading, and storage operations:

1. The vapor balance system required by sections 21.2.a. and 21.2.b. shall be connected between the tank truck and storage vessel during all gasoline transfer operations;

2. All storage vessel openings, including inspection hatches and gauging and sampling devices shall be vapor tight when not in use;

3. The gasoline tank truck compartment hatch covers shall not be opened during the gasoline transfer;

4. All vapor balance systems shall be designed and operated at all times to prevent gauge pressure in the gasoline tank truck from exceeding 450 millimeters (mm) (18 inches [in]) of water and vacuum from exceeding 150 mm (5.9 in) of water during product transfers;

5. No pressure vacuum relief valve in the bulk gasoline plant vapor balance system shall begin to open at a system pressure of less than 450 mm (18 in) of water or at a vacuum of less than 150 mm (5.9 in) of water;

6. All product transfers involving gasoline tank trucks at bulk gasoline plants subject to this section 21. shall be limited to vapor-tight gasoline tank trucks;

7. Filling of storage vessels shall be restricted to submerged fill;

8. Loading of outgoing gasoline tank trucks shall be limited to submerged fill; and

9. Owners or operators of bulk gasoline plants or owners or operators of tank trucks shall observe all parts of the transfer and shall discontinue transfer if any leaks are observed.

d. Each calendar month, the vapor balance systems described in sections 21.2.a. and 21.2.b. and each loading rack handling gasoline shall be inspected for liquid or vapor leaks during gasoline transfer operations. For purposes of this section 21.2.d., detection methods incorporating sight, sound, or smell are acceptable. Each leak that is detected shall be repaired within 15 calendar days after it is detected.

21.3. Compliance provisions. -- A pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument) capable of measuring 500 mm (20 in) of water gauge pressure within a ±2.5 mm (0.098 in) of water precision, shall be calibrated and installed on the bulk gasoline plant vapor balance system at a pressure tap, located as close as possible to the connection with the gasoline tank truck, to allow determination of compliance with section 21.2.c.4.

21.4. Recordkeeping. -- The owner or operator of a facility subject to this

section 21. shall maintain the following records in a readily accessible location for at least 3 years and shall ~~immediately~~ make these records available to the director upon verbal or written request.

a. All bulk gasoline plants subject to this section 21. shall maintain records showing the quantity of all gasoline loaded into gasoline tank trucks.

b. A record of each monthly leak inspection required under section 21.2.d. shall be kept on file at the plant. Inspection records shall include, as a minimum, the following information:

1. Date of inspection;

2. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);

3. Leak determination method;

4. Corrective action (date each leak repaired; reasons for any repair interval in excess of 15 days); and

5. Inspector name and signature.

21.5. Reporting. -- The owner or operator of any facility containing sources subject to this section 21. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-22. Bulk Gasoline Terminals.

22.1. Applicability. -- This section 22. applies to all loading racks at any bulk gasoline terminal which deliver liquid product into gasoline tank trucks.

22.2. Standards for loading racks at bulk gasoline terminals.

a. Each loading rack at a bulk gasoline terminal subject to this section 22. shall be equipped with a vapor collection system designed to collect the total volatile organic compound (VOC) vapors displaced from tank trucks during product loading.

b. Each vapor collection system shall be designed to prevent any VOC vapors collected at one loading rack from passing to another loading rack.

c. Loadings of liquid product into gasoline tank trucks shall be limited to vapor-tight gasoline tank trucks using the following procedures:

1. The owner or operator shall obtain the vapor tightness documentation described in sections 22.4.a. and 22.4.b. for each gasoline tank truck that is to be loaded at the bulk gasoline terminal loading rack subject to this section 22.;

2. The owner or operator shall require the tank identification number to be recorded as each gasoline tank truck is loaded at the terminal;

3. The owner or operator shall cross-check each tank identification number obtained in section 22.2.c.2. with the file of tank vapor tightness documentation within 2 weeks after the corresponding tank is loaded;

4. The terminal owner or operator shall notify the owner or operator of each non-vapor-tight gasoline tank truck loaded at the bulk gasoline terminal loading rack that the truck is not vapor tight subject to this section 22. within 3 weeks after the loading has occurred; and

5. The terminal owner or operator shall take steps to assure that the non-vapor-tight gasoline tank truck will not be reloaded at the bulk gasoline terminal loading rack subject to this section 22. until vapor tightness documentation for that tank is obtained.

d. The terminal owner or operator shall act to ensure that loadings of gasoline tank trucks at the bulk gasoline terminal loading rack subject to this section 22. are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system.

e. The terminal owner or operator shall act to ensure that the terminal's and the tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the bulk gasoline terminal loading racks subject to this section 22.

f. The vapor collection and liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 Pascals (Pa) (450 millimeters [mm] of water) during product loading. This level is not to be exceeded when measured by the procedures specified in section 22.3.a.

g. No pressure-vacuum vent in the bulk gasoline terminal's vapor collection system shall begin to open at a system pressure less than 4,500 Pa (450 mm of water).

h. Each calendar month, the vapor collection system, the vapor control system, and each loading rack handling gasoline shall be inspected during the loading of gasoline tank trucks for total organic compounds liquid or vapor leaks. For purposes of this section 22.2.h., detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after it is detected.

i. The total organic compounds emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks shall not exceed 80 milligrams per liter (mg/L) (4.7 grains per gallon [grain/gal]) of gasoline loaded.

j. Loading of outgoing gasoline tank trucks shall be restricted to the use of submerged fill.

22.3. Test methods and procedures.

a. For the purpose of determining compliance with section 22.2.f., the following procedures shall be used:

1. Calibrate and install a pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument) capable of measuring up to 500 mm (20 inches [in]) of water gauge pressure with ±2.5 mm (0.098 in) of water precision.

2. Connect the pressure measurement device to a pressure tap in the terminal's vapor collection system, located as close as possible to the connection with the gasoline tank truck.

3. During the performance test, record the pressure every

5 minutes (min) while a gasoline tank truck is being loaded, and record the highest instantaneous pressure that occurs during each loading. Every loading position shall be tested at least once during the performance test.

b. For the purpose of determining compliance with the mass emission limitations of section 22.2.i., the following reference methods shall be used:

1. For the determination of volume at the exhaust vent:

A. Method 2B of 40 CFR Part 60, Appendix A for combustion vapor processing systems; and

B. Method 2A of 40 CFR Part 60, Appendix A for all other vapor processing systems; and

2. For the determination of total organic compounds concentration at the exhaust vent, Method 25A or 25B of 40 CFR Part 60, Appendix A. The calibration gas shall be either propane or butane.

c. Immediately prior to a performance test required for determination of compliance with sections 22.2.f. and 22.2.i., all potential sources of vapor leakage in the terminal's vapor collection system equipment shall be monitored for leaks according to the procedures in section 46. The monitoring shall be conducted only while a gasoline tank truck is being loaded. A reading of 10,000 parts per million by volume (ppmv) or greater as methane shall be considered a leak. All leaks shall be repaired prior to conducting the performance test.

d. The test procedure for determining compliance with sections 22.2.f. and 22.2.9. is as follows:

1. All testing equipment shall be prepared and installed as specified in the appropriate test methods.

2. The time period for a performance test shall be not less than 6 hours, during which at least 300,000 liters (L) (80,000 gallons [gal]) of gasoline are loaded. If the throughput criterion is not met during the initial 6 hours, the test may be either continued until the throughput criterion is met, or resumed the next day with another complete 6 hours of testing. As much as possible, testing shall be conducted during the 6-hour period in which the highest throughput normally occurs.

3. For intermittent vapor processing systems:

A. The vapor holder level shall be recorded at the start

of the performance test. The end of the performance test shall coincide with a time when the vapor holder is at its original level; and

B. At least two startups and shutdowns of the vapor processor shall occur during the performance test. If this does not occur under automatically controlled operation, the system shall be manually controlled.

4. The volume of gasoline dispensed during the performance test period at all loading racks whose vapor emissions are controlled by the vapor processing system being tested shall be determined. This volume may be determined from terminal records or from gasoline dispensing meters at each loading rack.

5. An emission testing interval shall consist of each 5-minute period during the performance test. For each interval:

A. The reading from each measurement instrument shall be recorded; and

B. The volume exhausted and the average total organic compounds concentration in the exhaust vent shall be determined, as specified in the appropriate test method. The average total organic compounds concentration shall correspond to the volume measurement by taking into account the sampling system response time;

6. The mass emitted during each testing interval shall be calculated as follows:

$$M_{ei} = 10^{-6} K V_{es} C_e$$

where:

M_{ei} = Mass of total organic compounds (milligrams [mg]) emitted during testing interval i;

V_{es} = Volume of air-vapor mixture exhausted (cubic meters [m^3]), at standard conditions;

C_e = Total organic compounds concentration (as measured) at the exhaust vent (ppmv);

K = Density of calibration gas (milligrams/cubic meter [mg/m^3]) at standard conditions;

= 1.83×10^6 for propane;

= 2.41×10^6 for butane; and

s = Standard conditions, 20°C and 760 millimeters of Mercury (mm Hg); and

7. The total organic compounds mass emissions shall be calibrated as follows:

$$E = \frac{\sum_{i=1}^{n} M_{ei}}{L}$$

where:

E = mass of total organic compounds emitted per volume of gasoline loaded, mg/L;

M_{ei} = mass of total organic compounds emitted during testing interval i, mg;

L = total volume of gasoline loaded, L; and

n = number of testing intervals.

e. The owner or operator may adjust the emission results to exclude the methane and ethane content in the exhaust vent by any method approved by the commission and the U.S. EPA.

22.4. Recordkeeping. -- The owner or operator of a facility subject to the requirements of this section 22. shall maintain the following records in a readily accessible location for at least 3 years and shall make these records available to the commission upon verbal or written request.

a. The tank truck vapor tightness documentation required under section 22.2.c.1. shall be kept on file at the terminal in a permanent form available for inspection.

b. The documentation file for each gasoline tank truck shall be updated at least once per year to reflect current test results as determined by Method 27 of 40 CFR Part 60, Appendix A. This documentation shall include, as a minimum, the following information:

1. Test title: Gasoline Delivery Tank Pressure Test--EPA Reference Method 27;

2. Tank owner and address;

3. Tank identification number;

4. Testing location;

5. Date of test;

6. Tester name and signature;

7. Witnessing inspector, if any: Name, signature, and affiliation; and

8. Test results: Actual pressure change in 5 min, mm of water (average for two runs).

c. A record of each monthly leak inspection required under section 22.2.h. shall be kept on file at the terminal. Inspection records shall include, as a minimum, the following information:

1. Date of inspection;

2. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);

3. Leak determination method;

4. Corrective action (date each leak repaired, reasons for any repair interval in excess of 15 days); and

5. Inspector name and signature.

d. The terminal owner or operator shall keep documentation of all notifications required under section 22.2.c.4. on file at the terminal.

e. Daily records shall be maintained of gasoline throughput.

22.5. Reporting. -- The owner or operator of any facility containing sources subject to this section 22. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-23. Gasoline Dispensing Facility--Stage I Vapor Recovery.

23.1. Applicability.

a. This section 23. applies to any gasoline dispensing facility and the appurtenant equipment necessary to a gasoline dispensing facility.

b. The following are subject only to section 23.2.a.1.:

1. Any transfer made to a gasoline dispensing facility storage tank that is equipped with a floating roof or its equivalent that has been approved by the U.S. EPA;

2. Any stationary gasoline storage container with a capacity that is less than 2,080 liters (L) (550 gallons [gal]) that is used exclusively for the fueling of implements of husbandry;

3. Any stationary storage tank with a capacity of less than 7,600 L (2,000 gal) that was constructed prior to January 1, 1979; and

4. Any stationary storage tank with a capacity of less than 950 L (250 gal) that was constructed after December 31, 1978.

c. Any gasoline dispensing facility with a throughput of less than 38,000 L (10,000 gal) per month is subject only to the provisions of sections 23.2.a.1. and 23.3. ~~Any gasoline dispensing facility that ever exceeds this applicability threshold shall be subject to all of the provisions of this section 23. and shall remain subject to these provisions even if its throughput later falls below the threshold.~~

23.2. Standards.

a. The owner or operator of each gasoline dispensing facility subject to this section 23. shall comply with the following requirements:

1. All gasoline storage vessels at gasoline dispensing facilities shall be loaded by submerged fill;

2. All vapor lines on the storage vessel shall be equipped with closures that seal upon disconnect;

3. A vapor balance system shall be installed with a vapor-tight line from the gasoline storage tank to the gasoline tank truck. The system shall be designed such that the back pressure in the gasoline tank truck does not exceed

450 millimeters (mm) (18 inches [in]) of water pressure or 150 mm (5.9 in) of water vacuum;

4. If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends to within 150 mm (5.9 in) of the gasoline storage vessel bottom; and

5. Liquid fill connections for all systems shall be equipped with vapor tight caps.

b. The owner or operator of a gasoline tank truck shall not unload gasoline to a gasoline storage vessel at a gasoline dispensing facility subject to this section 23. unless the following conditions are met:

1. All hoses in the vapor balance system are properly connected;

2. Closures that seal upon disconnect are required on the adapters or couplers that attach to the vapor line on the underground storage vessel;

3. All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor tight;

4. All vapor return equipment are compatible with the vapor balance equipment installed on the gasoline dispensing facility storage vessel;

5. All hatches on the gasoline tank truck are closed and securely fastened; and

6. The filling of storage vessels at gasoline dispensing facilities are limited to unloading by vapor-tight gasoline tank trucks. Documentation that the gasoline tank truck has met the specifications of Method 27 of 40 CFR Part 60, Appendix A, shall be carried on the tank truck. This documentation shall include all of the information required under 40 CFR 60.505. In addition, test results shall be included for both the pressure and vacuum tests.

23.3. Recordkeeping. -- The owner or operator of each gasoline dispensing facility subject to this section 23. shall maintain records showing the quantity of all gasoline delivered to the site. These records shall be retained for at least 3 years in a readily accessible location and shall be made available to the commission ~~immediately~~ upon verbal or written request.

23.4. Reporting. -- The owner or operator of any facility containing sources subject to this section 23. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-24. Leaks from Gasoline Tank Trucks.

24.1. Applicability. -- This section 24. applies to any gasoline tank truck equipped for gasoline vapor collection. No exemptions are allowable based on number of gasoline tank trucks or total quantity of volatile organic compound (VOC) emissions.

24.2. Standards. -- Each owner or operator of a gasoline tank truck subject to this section 24. shall ensure that the gasoline tank truck:

a. Is a vapor-tight gasoline tank truck as demonstrated by Method 27 of Appendix A of 40 CFR Part 60.

b. Displays a sticker near the Department of Transportation Certification plate required by 49 CFR 178.340-10b, that:

1. Shows the date that the tank truck last passed the test required in section 24.2.a.;

2. Shows the identification number of the truck tank; and

3. Expires not more than 1 year from the date of the leak tight test.

c. Operates with hatches open only during measurement of product level or maintenance.

24.3. Monitoring for leaks from gasoline tank trucks.

a. The commission may, at any time, monitor a gasoline tank truck by the method referenced in section 24.3.b. to confirm continuing compliance with this section 24.

b. Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051.

24.4. Test methods and procedures. -- The test procedures to determine compliance with this section 24. shall be Method 27 of 40 CFR Part 60, Appendix A.

24.5. Recordkeeping and reporting requirements.

a. The owner or operator of a gasoline tank truck subject to this

section 24. shall maintain records of all certification, testing, and repairs. The records shall identify the gasoline tank truck, the date of the tests or repair, and, if applicable, the type of repair and the date of retest. The records shall be maintained in a legible, readily available condition for at least 3 years after the date the testing or repair is completed. These records shall be made available to the director ~~immediately~~ upon written or verbal request.

b. The records of certification tests required by section 24.5.a., shall, as a minimum, contain:

1. The gasoline tank truck vessel tank identification number;

2. The initial test pressure and the time of the reading;

3. The final test pressure and the time of the reading;

4. The initial test vacuum and the time of the reading;

5. The final test vacuum and the time of the reading;

6. At the top of each report page, the company name and the date and location of the tests on that page; and

7. The name and the title of person conducting the test.

c. The owner or operator of a gasoline tank truck subject to this section 24. shall certify and report to the director annually that the tank truck has been tested by an applicable method referenced in section 24.4. The certification shall include:

1. The name and address of the company and the name and telephone number of the responsible company representative under whose signature the certification is submitted; and

2. A copy of the information recorded to comply with section 24.5.b.

d. Copies of all records and reports under this section 24. shall ~~immediately~~ be made available to the director upon verbal or written request.

§45-21-25. Petroleum Refinery Sources.

25.1. Applicability.

a. This section 25. applies to any vacuum-producing system, wastewater separator, and process unit turnaround at petroleum refinery sources. No exemptions are allowable based on size or throughput of a facility.

b. This section 25. does not apply to segregated storm water runoff drain systems or to non-contact cooling water systems.

25.2. Definitions. -- As used in this section 25., all terms not defined herein shall have the meaning given them in section 2.

a. "Accumulator" means the reservoir of a condensing unit receiving the condensate from the condenser.

b. "Firebox" means the chamber or compartment of a boiler or furnace in which materials are burned but does not mean the combustion chamber of an incinerator.

c. "Forebays" means the primary sections of a wastewater separator.

d. "Hot well" means the reservoir of a condensing unit receiving the warm condensate from the condenser.

e. "Refinery fuel gas" means any gas that is generated by a petroleum refinery process unit and that is combusted, including any gaseous mixture of natural gas and fuel gas.

f. "Turnaround" means the procedure of shutting a refinery unit down after a run to perform necessary maintenance and repair work and returning the unit to operation.

g. "Vacuum producing system" means any reciprocating, rotary, or centrifugal blower or compressor, or any jet ejector or device that takes suction from a pressure below atmospheric and discharges against atmospheric pressure.

h. "Wastewater (oil/water) separator" means any device or piece of equipment that utilizes the difference in density between oil and water to remove oil and associated chemicals from water, or any device, such as a flocculation tank, clarifier, etc., that removes petroleum-derived compounds from wastewater.

25.3. Standards.

a. Vacuum producing systems. -- No person shall permit the emission of any uncondensed volatile organic compound (VOC) from the condensers, hot wells, or accumulators of any vacuum producing system at a petroleum refinery. The standard shall be achieved by:

1. Piping the uncondensed vapors to a firebox or incinerator; or

2. Compressing the vapors and adding them to the refinery fuel gas.

b. Wastewater separators. -- The owner or operator of any wastewater (oil/water) separator at a petroleum refinery shall:

1. Provide covers and seals on all separators and forebays; and

2. Equip all openings in covers, separators, and forebays with lids or seals and keep the lids or seals in the closed position at all times except when in actual use.

c. Process unit turnarounds. -- The owner or operator of a petroleum refinery shall provide for the following during process unit turnaround:

1. Depressurization venting of the process unit or vessel to a vapor recovery system, flare, or firebox;

2. No emission of VOC from a process unit or vessel until its internal pressure is 136 kiloPascals (kPa) (19.7 pounds per square inch atmospheric [psia]) or less; and

3. Recordkeeping of the following items:

A. Date of every process unit or vessel turnaround;

B. The internal pressure of the process unit or vessel immediately prior to venting to the atmosphere.

25.4. Recordkeeping. -- The owner or operator of a petroleum refinery shall maintain the records required by section 25.3.c.3. in a readily accessible location for at least 3 years and shall make these records available to the director upon verbal or written request.

25.5. Reporting. -- The owner or operator of any facility containing sources subject to this section 25. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-26. Leaks from Petroleum Refinery Equipment.

26.1. Applicability.

a. This section 26. applies to all equipment in volatile organic compound (VOC) service in any process unit at a petroleum refinery, regardless of size or throughput.

b. The requirements of sections 26.4. through 26.8. do not apply to:

1. Any equipment in vacuum service;

2. Any pressure relief valve that is connected to an operating flare header or vapor recovery device;

3. Any liquid pump that has a dual mechanical pump seal with a barrier fluid system;

4. Any compressor with a degassing vent that is routed to an operating VOC control device; and

5. Pumps and valves in heavy liquid service except that if evidence of a leak is found by visual, audible, olfactory, or other detection method, the owner or operator must confirm the presence of a leak using the methods specified in section 46. If a leak is confirmed, the owner or operator must repair the leak as specified in section 26.7.

26.2. Definitions. -- As used in this section 26., all terms not defined herein shall have the meaning given them in section 2.

a. "[In] gas/vapor service" means that the piece of equipment in VOC service contains process fluid that is in the gaseous state at operating conditions.

b. "[In] heavy liquid service" means that the piece of equipment in VOC service is not in gas/vapor service or in light liquid service.

c. "[In] light liquid service" means that the piece of equipment in VOC service contains a liquid that meets the following conditions: (1) the vapor pressure of one or more of the components is greater than 0.3 kPa (0.044 in Hg) at 20°C (68°F) (standard reference texts or ASTM D2879 shall be used to determine the vapor pressures); (2) the total concentration of the pure components having a vapor pressure greater than 0.3 kPa (0.044 in. Hg) at 20°C (68°F) is equal to or greater than 20 percent by weight; and (3) the fluid is a liquid at operating conditions.

d. "[In] vacuum service" means that the equipment in VOC service is operating at an internal pressure which is at least 5 kPa below ambient pressure.

e. "[In] VOC service" means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. The provisions of section 26.9.b. specify how to determine that a piece of equipment is not in VOC service.

26.3. Standards: General. -- The owner or operator of a petroleum refinery complex subject to this section 26. shall ensure that:

a. Any open-ended line or valve is sealed with a second valve, blind flange, cap, or plug except during operations requiring process fluid flow through the open-ended line or valve.

b. When a second value is used, each open-ended line or valve equipped with a second valve is operated in such a manner that the valve on the process fluid end is closed before the second valve is closed.

c. When a double block-and-bleed system is used, the bleed valve or line is open only during operations that require venting of the line between the block valves and is closed at all other times.

26.4. Standards: Equipment inspection program. -- The owner or operator of a petroleum refinery shall conduct the equipment inspection program described in sections 26.4.a. through 26.4.c. using the test methods specified in section 46.

a. The owner or operator of a petroleum refinery shall conduct quarterly monitoring of each:

1. Compressor;

2. Pump in light liquid service;

3. Valve in light liquid service, except as provided in sections 26.5. and 26.6.;

4. Valve in gas/vapor service, except as provided in sections 26.5. and 26.6.; and

5. Pressure relief valve in gas/vapor service, except as provided in sections 26.5. and 26.6.

b. The owner or operator of a petroleum refinery shall conduct a

weekly visual inspection of each pump in light liquid service.

c. The owner or operator of a petroleum refinery shall monitor each pressure relief valve after each overpressure relief to ensure that the valve has properly reseated and is not leaking.

d. When an instrument reading of 10,000 parts per million (ppm) or greater is measured, it shall be determined that a leak has been detected.

e. If there are indications of liquid dripping from the equipment, it shall be determined that a leak has been detected.

f. When a leak is detected, the owner or operator shall affix a weatherproof, readily visible tag in a bright color such as red or yellow bearing the equipment identification number and the date on which the leak was detected. This tag shall remain in place until the leaking equipment is repaired. An alternative leak identifier system may be used if the owner or operator demonstrates to the director that the system is equally as effective. The requirements of this section 26.4.f. apply to any leak detected by the equipment inspection program and to any leak from any equipment that is detected on the basis of sight, sound, or smell.

26.5. Standards: Alternative standards for valves--skip period leak detection and repair.

a. An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in section 26.4.

b. After two consecutive quarterly leak detection periods with the percent of valves leaking equal or less than 2.0, an owner or operator may begin to skip one of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

c. After five consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

d. If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in section 26.4. but can again elect to use the requirements in section 26.5.

e. The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has

been delayed by the total number of valves subject to the requirements of this section 26.

f. An owner or operator shall keep a record of the percent of valves found leaking during each leak detection period.

26.6. Standards: Alternative standards for unsafe-to-monitor valves and difficult-to-monitor valves.

a. Any valve that is designated, as described in section 26.6.a.1., as an unsafe-to-monitor valve is exempt from the requirements of section 26.4. if:

1. The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with section 26.4.d.; and

2. The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

b. Any valve that is designated, as described in section 26.6.b.1., as a difficult-to-monitor valve is exempt from the requirements of section 26.4. if:

1. The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters (m) (6.6 feet [ft]) above a support surface; and

2. The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

26.7. Standards: Equipment repair program. -- The owner or operator of a petroleum refinery shall:

a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and

b. Repair any leak as soon as practicable, but not later than 15 calendar days after it is detected except as provided in section 26.8.

26.8. Standards: Delay of repair.

a. Delay of repair of equipment for which a leak has been detected will be allowed if the repair is technically infeasible without a process unit shutdown. Repair of such equipment shall occur before the end of the next process

unit shutdown.

b. Delay of repair of equipment will be allowed for equipment that is isolated from the process and that does not remain in VOC service.

c. Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

26.9. Test methods and procedures.

a. In conducting the tests required to comply with section 26.4., the owner or operator shall use the test methods specified in section 46.

b. The owner or operator shall test each piece of equipment as required under section 26.4. unless it is demonstrated that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

1. Procedures that conform to the general methods in ASTM E260, E168 and E169 shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

2. Where the test methods in section 26.9.b.1. also measure exempt compounds, these compounds may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

3. Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in VOC service. If the commission disagrees with the judgment, sections 26.9.b.1. and 26.9.b.2. shall be used to resolve the disagreement.

c. The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that:

1. All of the following conditions apply:

A. The vapor pressure of one or more of the components is greater than 0.3 kiloPascals (kPa) at 20°C (0.09 inches of Mercury [in Hg] at 68°F); standard reference texts or ASTM D2879 shall be used to determine the vapor pressures;

B. The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20°C (0.09 in Hg at 68°F) is equal to or greater than 20 percent by weight; and

C. The fluid is a liquid at operating conditions; or

2. The percent VOC evaporated is greater than 10 percent at 150°C (302°F) as determined by ASTM D86.

d. Samples used in conjunction with sections 26.9.b. and 26.9.c. shall be representative of the process fluid that is contained in or contacts the equipment.

26.10. Recordkeeping requirements.

a. Each owner or operator subject to the provisions of this section 26. shall comply with the recordkeeping requirements of this section 26. Except as noted, these records shall be maintained in a readily accessible location for a minimum of 3 years and shall be made available to the director ~~immediately~~ upon verbal or written request.

b. An owner or operator of more than one affected facility subject to the provisions of this section 26. may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

c. When each leak is detected as specified in section 26.4., the following information shall be recorded in a log and shall be kept for 3 years in a readily accessible location:

1. The instrument and operator identification numbers and the equipment identification number;

2. The date the leak was detected and the dates of each attempt to repair the leak;

3. The repair methods employed in each attempt to repair the leak;

4. The notation "Above 10,000" if the maximum instrument reading measured by the methods specified in section 46. after each repair attempt is equal to or greater than 10,000 ppm;

5. The notation "Repair Delayed" and the reason for the delay

if a leak is not repaired within 15 calendar days after discovery of the leak;

6. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process unit shutdown;

7. The expected date of successful repair of the leak if a leak is not repaired within 15 days;

8. The dates of process unit shutdowns that occur while the equipment is unrepaired; and

9. The date of successful repair of the leak.

d. A list of identification numbers of equipment in vacuum service shall be recorded in a log that is kept in a readily accessible location.

e. The following information pertaining to all valves subject to the requirements of section 26.6. shall be recorded in a log that is kept for 3 years in a readily accessible location:

1. A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve; and

2. A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the schedule for monitoring each valve.

f. The following information for valves complying with section 26.5. shall be recorded in a log that is kept for 3 years in a readily accessible location:

1. A schedule of monitoring; and

2. The percent of valves found leaking during each monitoring period as noted in section 26.5.f.

g. Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept for 3 years in a readily accessible location for use in determining exemptions as provided in section 26.1.

26.11. Reporting. -- The owner or operator of any facility containing sources subject to this section 26. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-27. Petroleum Liquid Storage in External Floating Roof Tanks.

27.1. Applicability.

a. This section 27. applies to any petroleum liquid storage tank that is equipped with an external floating roof and that has a capacity greater than 150,000 liters (L) (40,000 gallons [gal]).

b. This section 27. does not apply to any petroleum liquid storage tank that:

1. Is used to store waxy, heavy pour crude oil;

2. Has a capacity less than 1,600,000 L (420,000 gal) and is used to store produced crude oil and condensate prior to lease custody transfer;

3. Contains a petroleum liquid with a maximum true vapor pressure less than 10.5 kiloPascals (kPa) (1.5 pounds per square inch atmospheric [psia]) provided that records are kept consistent with section 27.5.b.;

4. Contains a petroleum liquid with a maximum true vapor pressure less than 27.6 kPa (4.0 psia); and

A. Is of welded construction; and

B. Presently possesses a metallic-type shoe seal, a liquid-mounted foam seal, a liquid-mounted liquid-filled type seal, or other closure device of demonstrated equivalence approved by the commission and the U.S. EPA; or

5. Is of welded construction, equipped with a metallic-type shoe primary seal and has a secondary seal from the top of the shoe seal to the tank wall (shoe-mounted secondary seal).

27.2. Definitions. -- As used in this section 27., all terms not defined herein shall have the meaning given them in section 2.

a. "Liquid-mounted seal" means a primary seal mounted in continuous contact with the liquid between the tank wall and the floating roof around the circumference of the tank.

b. "Vapor-mounted seal" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

c. "Waxy, heavy-pour crude oil" means a crude oil with a pour point of 10°C (50°F) or higher as determined by the American Society for Testing and Materials Standard D97-66, "Test for Pour Point of Petroleum Oils."

27.3. Standards. -- No owner of a petroleum liquid storage vessel subject to this section 27. shall store a petroleum liquid in that tank unless:

a. The tank has been fitted with:

1. A continuous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal); or

2. A closure or other device that controls VOC emissions with an effectiveness equal to or greater than a seal required under section 27.3.a.1. and is approved by the commission and the U.S. EPA; and

b. All seal closure devices meet the following requirements:

1. There are no visible holes, tears, or other openings in the seal(s) or seal fabric;

2. The seal(s) are intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall;

3. For vapor-mounted primary seals, the accumulated area of gaps exceeding 0.32 centimeters (cm) (0.125 inches [in]) in width between the secondary seal and the tank wall shall not exceed 21.2 square centimeters per meter (cm^2/m) (1.0 square inches per foot [in^2/ft]) of tank diameter, as determined by the method in section 27.6.; and

c. All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, are:

1. Equipped with covers, seals, or lids in the closed position except when the openings are in actual use;

2. Equipped with projections into the tank that remain below the liquid surface at all times; and

d. Automatic bleeder vents are closed at all times except when the roof is being floated off or being landed on the roof leg supports;

e. Rim vents are set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting; and

f. Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.

27.4. Inspections. -- The owner or operator of a petroleum liquid storage tank with an external floating roof subject to this section 27. shall:

a. Perform routine inspections semi-annually in order to ensure compliance with section 27.3. (the inspections shall include a visual inspection of the secondary seal gap); and

b. Measure the secondary seal gap annually in accordance with section 27.6. when the floating roof is equipped with a vapor-mounted primary seal.

27.5. Recordkeeping.

a. The owner or operator of any petroleum liquid storage tank with an external floating roof subject to this section 27. shall maintain the following records in a readily accessible location for at least 3 years and shall make copies of the records available to the director upon verbal or written request:

1. Records of the types of volatile petroleum liquids stored;

2. Records of the maximum true vapor pressure of the liquid as stored; and

3. Records of the results of the inspections performed in accordance with section 27.4.

b. The owner or operator of a petroleum liquid storage vessel with an external floating roof exempted from this section 27. by section 27.1.b.3., but containing a petroleum liquid with a true vapor pressure greater than 7.0 kPa (1.0 psi), shall maintain the following records in a readily accessible location for at least 3 years and shall make copies of the records available to the director upon verbal or written request:

1. Records of the average monthly storage temperature;

2. Records of the type of liquid stored; and

3. Records of the maximum true vapor pressure for all petroleum liquids with a true vapor pressure greater than 7.0 kPa (1.0 psia).

c. The director may, upon written notice, require more frequent

inspections or modify the monitoring and recordkeeping requirements, when necessary to accomplish the purposes of this section 27.

27.6. Compliance provisions. -- Compliance with section 27.3.b.3. shall be determined by:

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

b. Summing the area of the individual gaps.

27.7. Reporting. -- The owner or operator of any facility containing sources subject to this section 27. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-28. Petroleum Liquid Storage in Fixed Roof Tanks.

28.1. Applicability.

a. This section 28. applies to any fixed roof petroleum liquid storage tank with a capacity greater than 150,000 liters (L) (40,000 gallons [gal]).

b. This section 28. does not apply to any petroleum liquid storage tank that:

1. Has a capacity of less than 1,600,000 L (420,000 gal) and is used to store produced crude oil and condensate prior to lease custody transfer;

2. Is a horizontal underground storage tank used to store JP-4 jet fuel; or

3. Contains a petroleum liquid with a maximum true vapor pressure less than 10.5 kiloPascals (kPa) (1.5 pounds per square inch atmospheric [psia]), provided that records are maintained consistent with section 28.5.b.

28.2. Definitions. -- As used in this section 28., all terms not defined herein shall have the meaning given them in section 2.

"Internal floating roof" means a cover or roof in a fixed roof tank that rests upon or is floated upon the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

28.3. Standards. -- No owner or operator of a petroleum liquid storage tank subject to this section 28. shall store petroleum liquid in that tank unless:

a. The tank is equipped with:

1. An internal floating roof equipped with a closure seal or seals to close the space between the roof edge and tank wall; or

2. Equally effective alternative control, approved by the commission and the U.S. EPA;

b. The tank is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; and

c. All openings, except stub drains, are equipped with covers, lids, or seals such that:

1. The cover, lid, or seal is in the closed position at all times except when in actual use;

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

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

28.4. Inspections. -- The owner or operator of a petroleum liquid storage tank with a fixed roof subject to this section 28. shall:

a. Perform routine, semi-annual, visual inspections of the internal floating roof and its closure seal or seals through roof hatches; and

b. Perform a complete inspection of cover and seal whenever the tank is emptied for non-operational reasons or at least every 5 years, whichever is more frequent.

28.5. Recordkeeping.

a. The owner or operator of a petroleum liquid storage tank with a fixed roof subject to this section 28. shall maintain the following records in a readily accessible location for at least 3 years and shall make copies of the records available to the director upon verbal or written request;

1. Records of the types of volatile petroleum liquids stored in that tank;

2. Records of the maximum true vapor pressure of the liquid as stored; and

3. Records of the results of the inspections required in section 28.4.

b. The owner or operator of a petroleum liquid storage tank with a fixed roof exempted from this section 28. by section 28.1.b., but containing a petroleum liquid with a true vapor pressure greater than 7.0 kPa (1.0 psia), shall maintain the following records in a readily accessible location for at least 3 years and shall make copies of the records available to the director upon verbal or written request:

1. Records of the average monthly storage temperature;

2. Records of the type of liquid stored; and

3. Records of the maximum true vapor pressure for any petroleum liquid with a true vapor pressure greater than 7.0 kPa (1.0 psia).

28.6. Reporting. -- The owner or operator of any facility containing sources subject to this section 28. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-29. Leaks from Natural Gas/Gasoline Processing Equipment.

29.1. Applicability.

a. This section 29. applies to all equipment in volatile organic compound (VOC) service in any process unit at any natural gas/gasoline processing facility.

b. This section 29. does not apply to:

1. Any equipment in vacuum service;

2. Any equipment in heavy liquid service; or

3. Wet gas reciprocating compressors in plants that do not have a VOC control device, such as a flare or a continuously burning process heater or boiler.

c. The equipment inspection requirements in section 29.4. do not apply to:

1. Any natural gas/gasoline processing facility with a design field gas capacity of less than 2.8×10^5 standard cubic meters (10×10^6 standard cubic feet) per day that does not fractionate natural gas liquids;

2. Any pump with dual pump seals;

3. Any pressure relief valve that is connected to an operating flare header or vapor recovery device; or

4. Any compressor with a degassing vent that is routed to an operating VOC control device.

~~d. Any facility that becomes subject to the provisions of this section 29. by exceeding the applicability threshold in section 29.1.c.1. shall remain subject to these provisions, even if its throughput or emissions later fall below the applicability threshold.~~

29.2. Definitions. -- As used in this section 29., all terms not defined herein shall have the meaning given them in section 2.

a. "Equipment" means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service or in wet gas service and any devices or systems required

by this section 29.

b. "Field gas" means feedstock gas entering the natural gas processing plant.

c. "[In] gas/vapor service" means that the piece of equipment in VOC service contains process fluid that is in the gaseous state at operating conditions.

d. "[In] heavy liquid service" means that the piece of equipment in VOC service is not in gas/vapor service or in light liquid service.

e. "[In] light liquid service" means that the piece of equipment in VOC service contains a liquid that meets the following conditions: (1) the vapor pressure of one or more of the components is greater than 0.3 kPa (0.044 in. Hg) at 20°C (68°F) (standard reference texts or ASTM D2879 shall be used to determine the vapor pressures); (2) the total concentration of the pure components having a vapor pressure greater than 0.3 kPa (0.044 in. Hg) at 20°C (68°F) is equal to or greater than 20 percent by weight; and (3) the fluid is a liquid at operating conditions.

f. "Liquids dripping" means any visible leakage from a seal including spraying, misting, clouding, and ice formation.

g. "Natural gas liquids" means the hydrocarbons, such as ethane, propane, butane, and pentane, that are extracted from field gas.

h. "Natural gas processing plant" (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

i. "Nonfractionating plant" means any gas plant that does not fractionate mixed natural gas liquids into natural gas products.

j. "Process unit" means equipment assembled for the extraction of natural gas liquids from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.

k. "Reciprocating compressor" means a piece of equipment that increases the pressure of a process gas by positive displacement, employing linear movement of the driveshaft.

l. "[In] vacuum service" means that the equipment in VOC service is operating at an internal pressure which is at least 5 kPa below ambient pressure.

m. "[In] VOC service" means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. The provisions of ~~paragraph (i)(2) of this~~ section 29.9.b. specify how to determine that a piece of equipment is not in VOC service.

n. "[In] wet gas service" means that a piece of equipment contains or contacts the field gas before the extraction step in the process.

29.3. Standards: General. -- The owner or operator of a natural gas/gasoline processing facility subject to this section 29. shall ensure that:

a. Any open-ended line or valve is sealed with a second valve, blind flange, cap, or plug except during operations requiring process fluid flow through the open-ended line or valve;

b. When a second value is used, each open-ended line or valve equipped with a second valve is operated in such a manner that the valve on the process fluid end is closed before the second valve is closed; and

c. When a double block-and-bleed system is used, the bleed valve or line is open only during operations that require venting of the line between the block valves and is closed at all other times.

29.4. Standards: Equipment inspection program. -- The owner or operator of a natural gas/gasoline processing facility subject to this section 29.4. shall conduct the equipment inspection program described in sections 29.4.a. through 29.4.c. using the test methods specified in section 46.

a. The owner or operator of a natural gas/gasoline processing facility subject to this section 29. shall conduct quarterly monitoring of each:

1. Compressor;

2. Pump in light liquid service;

3. Valve in light liquid service, except as provided in sections 29.5. and 29.6.;

4. Valve in gas/vapor service, except as provided in sections 29.5. and 29.6.; and

5. Pressure relief valve in gas/vapor service, except as provided in sections 29.5. and 29.6.

b. The owner or operator of a natural gas/gasoline processing facility subject to this section 29. shall conduct a weekly visual inspection of each pump in light liquid service.

c. The owner or operator of a natural gas/gasoline processing facility subject to this section 29. shall monitor each pressure relief valve within 5 days after each overpressure relief to ensure that the valve has properly reseated and is not leaking, except;

1. Any pressure relief device that is located in a nonfractionating plant that is monitored only by non-plant personnel may be monitored after a pressure release the next time the monitoring personnel are on site, instead of within 5 days; and

2. No pressure relief device described in section 29.4.c.1. shall be allowed to operate for more than 30 days after a pressure release without monitoring.

d. It shall be determined that a leak has been detected when:

1. An instrument reading of 10,000 parts per million (ppm) or greater is measured; or

2. There are indications of liquid dripping from the equipment.

e. When a leak is detected, the owner or operator shall affix a weatherproof, readily visible tag in a bright color such as red or yellow, bearing the equipment identification number and the date on which the leak was detected. This tag shall remain in place until the leaking equipment is repaired. An alternative leak identifier system may be used if the owner or operator demonstrates to the director that the system is equally as effective. The requirements of this section 29.4.e. apply to any leak detected by the equipment inspection program and to any leak from any equipment that is detected on the basis of sight, sound, or smell.

29.5. Standards: Alternative standards for valves--skip period leak detection and repair.

a. An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in section 29.4.

b. After two consecutive quarterly leak detection periods with the percent of valves leaking equal or less than 2.0, an owner or operator may skip one of the quarterly leak detection periods for the valves in gas/vapor and light liquid

service.

c. After five consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip three of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

d. If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in section 29.4. but can again elect to use the requirements in section 29.5.

e. The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section 29.

f. An owner or operator shall keep a record of the percent of valves found leaking during each leak detection period.

29.6. Standards: Alternative standards for valves that are unsafe or difficult to monitor.

a. Any valve that is designated, as described in section 29.6.a.1., as an unsafe-to-monitor valve is exempt from the requirements of section 29.4. if:

1. The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with section 29.4.; and

2. The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

b. Any valve that is designated, as described in section 29.6.b.1., as a difficult-to-monitor valve is exempt from the requirements of section 29.4. if:

1. The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters (m) (6.6 feet [ft]) above a support surface; and,

2. The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

29.7. Standards: Equipment repair program. ---The owner or operator of a

natural gas/gasoline processing facility shall:

a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and

b. Repair any leak as soon as practicable, but not later than 15 calendar days after it is detected except as provided in section 29.8.

29.8. Standards: Delay of repair.

a. Delay of repair of equipment for which a leak has been detected will be allowed if the repair is technically infeasible without a process unit shutdown. Repair of such equipment shall occur before the end of the next process unit shutdown.

b. Delay of repair of equipment will be allowed for equipment that is isolated from the process and that does not remain in VOC service.

c. Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

29.9. Test methods and procedures.

a. In conducting the tests required to comply with section 29.4., the owner or operator shall use the test methods specified in section 46.

b. The owner or operator shall test each piece of equipment unless it is demonstrated that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed ~~1~~ 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

1. Procedures that conform to the general methods in ASTM E260, E168 and E169 shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment;

2. Where the test methods in section 29.9.b.1. also measure exempt compounds, these compounds may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid; and

3. Engineering judgment may be used to estimate the VOC

content, if a piece of equipment had not been shown previously to be in VOC service. If the commission disagrees with the judgment, sections 29.9.b.1. and 29.9.b.2. shall be used to resolve the disagreement.

c. The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all of the following conditions apply:

1. The vapor pressure of one or more of the components is greater than 0.3 kiloPascal (kPa) at 20°C (0.09 inches of Mercury [in Hg] at 68°F). Standard reference texts or ASTM D2879 shall be used to determine the vapor pressures;

2. The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20°C (0.09 in Hg at 68°F) is equal to or greater than 20 percent by weight; and

3. The fluid is a liquid at operating conditions.

d. Samples used in conjunction with sections 29.9.b. and 29.9.c. shall be representative of the process fluid that is contained in or contacts the equipment.

29.10. Recordkeeping requirements.

a. Each owner or operator subject to the provisions of this section 29. shall comply with the recordkeeping requirements of this section 29.

b. An owner or operator of more than one affected facility subject to the provisions of this section 29. may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

c. When each leak is detected as specified in section 29.4., the following information shall be recorded in a log and shall be kept for 3 years in a readily accessible location:

1. The instrument and operator identification numbers and the equipment identification number;

2. The date the leak was detected and the dates of each attempt to repair the leak;

3. The repair methods employed in each attempt to repair the leak;

4. The notation "Above 10,000" if the maximum instrument reading measured by the methods specified in section 46. after each repair attempt is equal to or greater than 10,000 ppm;

5. The notation "Repair Delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak;

6. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process unit shutdown;

7. The expected date of successful repair of the leak if a leak is not repaired within 15 days;

8. The dates of process unit shutdowns that occur while the equipment is unrepaired; and

9. The date of successful repair of the leak.

d. A list of identification numbers of equipment in vacuum service shall be recorded in a log that is kept in a readily accessible location.

e. The following information pertaining to all valves subject to the requirements of section 29.6. shall be recorded in a log that is kept for 3 years in a readily accessible location:

1. A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve; and

2. A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the schedule for monitoring each valve.

f. The following information pertaining to all valves complying with section 29.5. shall be recorded in a log that is kept for 3 years in a readily accessible location:

1. A schedule of monitoring; and

2. The percent of valves found leaking during each monitoring period.

g. The following information shall be recorded in a log that is kept for 3 years in a readily accessible location for use in determining exemptions as

provided in section 29.1.:

1. An analysis demonstrating the design capacity of the affected facility;

2. Information and data used to demonstrate that a piece of equipment is not in VOC service; and

3. Information and data used to demonstrate that a reciprocating compressor is in wet gas service.

29.11. Reporting. -- The owner or operator of any facility containing sources subject to this section 29. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-30. Solvent Metal Cleaning.

30.1. Applicability. -- This section 30. applies to all solvent metal cleaning sources with the following exemptions:

a. Any open top vapor degreasing operation with an open area smaller than 1 square meter (m^2) (10.8 square feet [ft^2]) is exempt from sections 30.3.b.3.B. and 30.3.b.3.D.; and,

b. Any conveyorized degreaser with an air/vapor interface smaller than 2.0 m^2 (21.5 ft^2) is exempt from section 30.3.c.2.

30.2. Definitions. -- As used in this section 30., all terms not defined herein shall have the meaning given them in section 2.

a. "Cold cleaning" means the batch process of cleaning and removing soils from a metal surface by spraying, brushing, flushing, or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition.

b. "Conveyorized degreasing" means the process of cleaning and removing soils from a continuous stream of metal parts using either cold or vaporized solvents.

c. "Freeboard height" means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For an open-top vapor degreaser, it is the distance from the vapor level in the tank during idling to the lip of the tank. For a vapor-conveyorized degreaser, it is the distance from the vapor level to the bottom of the entrance or exit opening, whichever is lower. For a cold-conveyorized degreaser, it is the distance from the liquid solvent level to the bottom of the entrance or exit opening, whichever is lower.

d. "Freeboard ratio" means the freeboard height divided by the smaller interior dimension (length, width, or diameter) of the degreaser tank.

e. "Open-top vapor degreasing" means the process using condensation of hot solvent vapor to clean and remove soils from a batch of metal parts.

f. "Refrigerator chiller" means a device mounted above both the water jacket and the primary condenser coils which carries a refrigerant that provides a chilled air blanket above the solvent vapor, thereby reducing emissions from the degreaser bath.

g. "Solvent metal cleaning" means the process of cleaning soils from metal surfaces by cold cleaning, open-top vapor degreasing, or conveyorized degreasing.

30.3. Standards.

a. Cold cleaning facilities. -- The owner or operator of a cold cleaning facility shall:

1. Equip the cleaner with a cover that is easily operated with one hand, if:

A. The solvent true vapor pressure is greater than 2 kiloPascals (kPa) (15 millimeters of Mercury [mm Hg] or 0.3 pounds per square inch [psi]) measured at 38°C (100°F) by ASTM D323-72;

B. The solvent is agitated; or

C. The solvent is heated;

2. Equip the cleaner with an internal drainage facility so that parts are enclosed under the cover while draining if the solvent true vapor pressure is greater than 4.3 kPa (32 mm Hg or 0.6 psi) measured at 38°C (100°F) by ASTM D323-72, except that the drainage facility may be external for applications where an internal type cannot fit into the cleaning system;

3. Implement one of the following control measures if the solvent true vapor pressure is greater than 4.3 kPa (32 mm of mercury or 0.6 psi) measured at 38°C (100°F) by ASTM D323-72, or if the solvent is heated above 50°C (120°F):

A. Freeboard that gives a freeboard ratio greater than or equal to 0.7; or

B. Water cover at least 2.54 centimeters (1 inch) in depth (solvent shall be insoluble in and heavier than water); or

C. Another system of equivalent control, such as a refrigerated chiller or a carbon adsorber, approved by the commission;

4. Provide a permanent, legible, conspicuous label, summarizing the operating requirements;

5. Store waste solvent in covered containers;

6. Close the cover whenever parts are not being handled in the cleaner;

7. Drain the cleaned parts until dripping ceases;

8. If used, supply a solvent spray that is a solid fluid stream (not a fine, atomized, or shower-type spray) at a pressure that does not exceed 10 pounds per square inch gauge (psig); and

9. Degrease only materials that are neither porous nor absorbent.

b. Open top vapor degreasers. -- Except as provided under section 30.1.a., the owner or operator of an open top vapor degreaser shall:

1. Equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone;

2. Provide the following safety switches:

A. A vapor level thermostat that shuts off the pump heat if the condenser coolant is either not circulating or too warm; and

B. A spray safety switch that shuts off the spray pump if the vapor level drops more than 10 centimeters (cm) (4 inches [in]); and

3. Implement one of the following control measures:

A. Freeboard ratio greater than or equal to 0.75 and, if the degreaser opening is greater than 1 m^2 (10.8 ft^2), a powered cover;

B. Refrigerated chiller;

C. Enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser);

D. Carbon adsorption system, with ventilation greater than or equal to 15 cubic meters per minute per square meter ($m^3/min/m^2$) (50 cubic feet per minute per square foot[$ft^3/min/ft^2$]) of air/vapor area (when cover is open), and exhausting less than 25 parts per million (ppm) of solvent averaged over one complete adsorption cycle, or 24 hours, whichever is less; or

E. A control system, demonstrated to have a capture efficiency equivalent to or greater than any of the above and approved by the

commission and the U.S.EPA;

4. Keep the cover closed at all times except when processing work loads through the degreaser;

5. Minimize solvent carryout by:

A. Racking parts so that solvent will drain freely and not be trapped;

B. Moving parts in and out of the degreaser at less than 3.3 meters per minute (m/min) (11 feet per minute [ft/min]);

C. Holding the parts in the vapor zone at least 30 seconds or until condensation ceases, whichever is longer;

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

E. Allowing parts to dry within the degreaser for at least 15 seconds or until visually dry, whichever is longer;

6. Degrease only materials that are neither porous nor absorbent;

7. Occupy no more than one-half of the degreaser's open top area with a workload;

8. Always spray within the vapor level;

9. Repair solvent leaks immediately, or shut down the degreaser;

10. Store waste solvent only in covered containers;

11. Operate the cleaner such that water cannot be visually detected in solvent exiting the water separator;

12. Use no ventilation fans near the degreaser opening, and ensure that room exhaust ventilation does not exceed 20 $m^3/min/m^2$ (65 $ft^3/min/ft^2$) of degreaser open area, unless a higher rate is necessary to meet OSHA requirements; and

13. Provide a permanent, conspicuous label, summarizing the

operating procedures of sections 30.3.b.4. through 30.3.b.12.

c. Conveyorized degreasers. -- Except as provided under section 30.1.b., the owner or operator of a conveyorized degreaser shall:

1. Use no workplace fans near the degreaser opening, and ensure that exhaust ventilation does not exceed 20 $m^3/min/m^2$ (65 $ft^3/min/ft^2$) of degreaser opening, unless a higher rate is necessary to meet OSHA requirements;

2. Install one of the following control devices:

A. Refrigerated chiller;

B. Carbon adsorption system, with ventilation greater than or equal to 15 $m^3/min/m^2$ (50 $ft^3/min/ft^2$) of air/vapor area (when downtime covers are open), and exhausting less than 25 ppm of solvent by volume averaged over a complete adsorption cycle; or

C. A system demonstrated to have a capture efficiency equivalent to or greater than the devices listed in section 30.3.c.2.A. or section 30.3.c.2.B. and approved by the commission and the U.S. EPA.

3. Equip the cleaner with equipment, such as a drying tunnel or rotating (tumbling) basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor;

4. Provide the following safety switches:

A. A condenser flow switch and thermostat that shut off the pump heat if the condenser coolant is either not circulating or too warm;

B. A spray safety switch which shuts off the spray pump or the conveyor if the vapor level drops more than 10 cm (4 in); and

C. A vapor level control thermostat that shuts off the pump heat when the vapor level rises too high;

5. Minimize openings during operation so that entrances and exits will silhouette workloads with an average clearance between the parts and the edge of the degreaser opening of less than 10 cm (4 in) or less than 10 percent of the width of the opening;

6. Provide downtime covers for closing off the entrance and exit during shutdown hours;

7. Minimize carryout emissions by:

A. Racking parts so that solvent will drain freely from parts and not be trapped; and

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

8. Store waste solvent only in covered containers;

9. Repair solvent leaks immediately, or shut down the degreaser;

10. Operate the cleaner such that water cannot be visually detected in solvent exiting the water separator;

11. Place downtime covers over entrances and exits of the conveyorized degreaser at all times when the conveyors and exhausts are not being operated; and

12. Degrease only materials that are neither porous nor absorbent.

30.4. Test methods. -- Compliance with sections 30.3.a.1. through 30.3.a.3., 30.3.b.3.D., 30.3.b.12., 30.3.c.1., and 30.3.c.2.B. shall be determined by applying the following test methods, which are found at 40 CFR Part 60, Appendix A, as appropriate:

a. Methods 1-4 for determining flow rates;

b. Method 18 for determining gaseous organic compound emissions by gas chromatography;

c. Method 25 for determining total gaseous non-methane organic emissions as carbon;

d. Method 25A or 25B for determining total gaseous organic concentrations using flame ionization or non-dispersive infrared analysis; and

e. ASTM D323-72 for measuring solvent true vapor pressure.

30.5. Recordkeeping. -- Each owner or operator of a solvent metal cleaning source subject to this section 30. shall maintain the following records in a readily accessible location for at least 3 years and shall make these records available to

the director upon verbal or written request:

a. A record of central equipment maintenance, such as replacement of the carbon in a carbon adsorption unit.

b. The results of all tests conducted in accordance with the requirements in section 30.4.

30.6. Reporting. -- The owner or operator of any facility containing sources subject to this section 30. shall:

a. Comply with the initial compliance certification requirements of section 5.1.;

b. Comply with the requirements of section 5.2. regarding reports of excess emissions; and

c. Comply with the requirements of section 5.3. for excess emissions related to any control devices used to comply with sections 30.3.a.3.C., 30.3.b.3.D. or 30.3.b.3.E., and ~~30.3.e.1.B. or 30.3.e.1.C.~~ 30.3.c.2.B. or 30.3.c.2.C.

§45-21-31. Cutback and Emulsified Asphalt.

31.1. Applicability. -- This section 31. applies to the manufacture, mixing, storage, use, and application of cutback and emulsified asphalts. No exemptions are allowable based on the size or throughput of an operation.

31.2. Definitions. -- As used in this section 31., all terms not defined herein shall have the meaning given them in section 2.

a. "Asphalt" means a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) of which the main constituents are bitumens that occur naturally or are a residue of petroleum refining.

b. "Cutback asphalt" means asphalt cement that has been liquefied by blending with petroleum solvents (diluents). Upon exposure to atmospheric conditions, the diluents evaporate, leaving the asphalt cement to perform its function.

c. "Emulsified asphalt" means an emulsion of asphalt cement and water that contains a small amount of an emulsifying agent; it is a heterogeneous system containing two normally immiscible phases (asphalt and water) in which the water forms the continuous phase of the emulsion, and minute globules of asphalt form the discontinuous phase.

d. "Ozone season" means the calendar period beginning April 1 and ending October 31.

e. "Penetrating prime coat" means an application of low-viscosity liquid asphalt to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime coat penetrates the base, plugs the voids, and hardens and helps bind the top to the overlying asphalt course. The penetrating prime coat also reduces the necessity of maintaining an untreated base course prior to placing the asphalt pavement.

31.3. Standards.

a. No person shall cause, allow, or permit the manufacture, mixing, storage, use, or application of cutback asphalts during the ozone season without approval of the commission as provided in section 31.3.b.

b. The commission may approve the manufacture, mixing, storage, use or application of cutback asphalts where:

1. Long-life stockpile storage is necessary; or

2. The cutback asphalt is to be used solely as a penetrating prime coat.

3. During the ozone season, no person shall cause, allow, or permit the manufacturing, mixing, storage, or use of emulsified asphalt that contains any volatile organic compound (VOC).

31.4. Recordkeeping. -- The owner or operator of any facility subject to this section 31. shall maintain records of the manufacture, mixing, storage, use, or application of any asphalt containing VOC during the ozone season. These records shall be maintained in a readily accessible location for a minimum of 3 years and shall be made available to the director upon verbal or written request.

§45-21-32. Manufacture of Synthesized Pharmaceutical Products.

32.1. Applicability. -- This section 32. applies to the following sources of volatile organic compounds (VOC) at all synthesized pharmaceutical manufacturing facilities:

a. Reactors;

b. Distillation operations;

c. Crystallizers;

d. Centrifuges;

e. Vacuum dryers;

f. Air dryers;

g. Production equipment exhaust systems;

h. Rotary vacuum filters and other filters;

i. In-process tanks; and

j. Leaks.

32.2. Definitions. -- As used in this section 32., all terms not defined herein shall have the meaning given them in section 2.

a. "Production equipment exhaust system" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.

b. "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.

c. "Separation operation" means a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include extraction, centrifugation, filtration, and crystallization.

d. "Synthesized pharmaceutical manufacturing" means manufacture of pharmaceutical products and intermediates by chemical synthesis. The production and recovery of materials produced via fermentation, extraction of organic chemicals from

vegetative materials or animal tissues, and formulation and packaging of the product are not considered synthesized pharmaceutical manufacturing.

32.3. Standards.

a. Reactors, distillation operations, crystallizers, centrifuges, and vacuum dryers. -- The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this section 32. shall control the VOC emissions from all vents from reactors, distillation operations, crystallizers, centrifuges, and vacuum dryers at the facility that emit 6.8 kilograms per day (kg/day) (15 pounds per day [lb/day]) or more of VOC as determined by the procedure in "Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products," Appendix B, EPA-450/2-78-029, December 1978. Surface condensers or equivalent controls shall be used, provided that:

1. If surface condensers are used, the condenser outlet gas temperature shall not exceed the allowable temperature limit described for each associated vapor pressure in the following table; or

Allowable condenser outlet gas temperature, °C	VOC vapor pressure at 20°C, kPa (psi)
-25	>40.01 (5.8)
-15	>20.0 (2.9)
0	>10.0 (1.5)
10	>7.0 (1.0)
25	>3.5 (0.5)

2. If equivalent controls such as carbon absorption or incineration are used, the VOC emissions shall be reduced by at least as much as they would be by using a surface condenser. The owner or operator shall calculate the efficiency equivalent to a condenser in accordance with the procedures specified on pages 4-2 through 4-6 in "Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products," Appendix B, EPA-450/2-78-029, December 1978.

b. Air dryers and production equipment exhaust systems. -- The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this section 32. shall reduce the VOC emissions from all air dryers and production equipment exhaust systems:

1. By at least 90 percent if emissions are ≥150 kg/day

(330 lb/day) or more of VOC; or

2. To 15.0 kg/day (33 lb/day) or less if emissions are less than 150 kg/day (330 lb/day) of VOC.

c. Storage tanks. -- The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this section 32. shall reduce the VOC emissions from storage tanks by:

1. Providing a vapor balance system or equivalent control that is at least 90 percent effective in reducing emissions from truck or railcar deliveries to storage tanks with capacities greater than 7,500 liters (L) (2,000 gallons [gal]) that store VOC with vapor pressures greater than 28.0 kiloPascals (kPa) (4.1 pounds per square inch [psi]) at 20°C (68°F); and

2. Installing pressure/vacuum conservation vents set at 0.2 kPa (0.03 pounds per square inch atmospheric [psia]) on all storage tanks that store VOC with vapor pressures greater than 10.0 kPa (1.5 psi) at 20°C (68°F).

d. Centrifuges, rotary vacuum filters, and other filters. -- The owner or operator of a synthesized pharmaceutical facility subject to this section 32. shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface where the liquid contains VOC and exerts a total VOC vapor pressure of 3.50 kPa (0.5 psi) or more at 20°C (68°F).

e. In-process tanks. -- The owner or operator of a synthesized pharmaceutical facility subject to this section 32. shall install covers on all in-process tanks that contain VOC at any time. These covers shall remain closed, unless production, sampling, maintenance, or inspection procedures require operator access.

f. Leaks. -- The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this section 32. shall repair all leaks from which a liquid containing VOC can be observed running or dripping. The repair shall be completed as soon as practicable but no later than 15 calendar days after the leak is found. If the leaking component cannot be repaired until the process is shut down, the leaking component shall then be repaired before the process is restarted.

32.4. Testing. -- The owner or operator of any facility containing sources subject to this section 32. shall comply with the testing requirements in section 45.

32.5. Monitoring for air pollution control equipment.

a. At a minimum, continuous monitors for the following parameters shall be installed on air pollution control equipment used to control sources subject

to this section 32.:

1. Destruction device combustion temperature;

2. Temperature rise across a catalytic incinerator bed;

3. VOC concentration on a carbon adsorption unit to determine breakthrough;

4. Outlet gas temperature of a refrigerated condenser; and

5. Temperature of a non-refrigerated condenser coolant supply system.

b. Each monitor shall be equipped with a recording device.

c. Each monitor shall be calibrated quarterly.

d. Each monitor shall operate at all times while the associated control equipment is operating.

32.6. Recordkeeping.

a. The owner or operator of a pharmaceutical manufacturing facility subject to this section 32. shall maintain the following records:

1. Parameters listed in section 32.5. shall be recorded; and

2. For sources subject to this section 32., the solvent true vapor pressure as determined by ASTM D323-72 shall be recorded for every process.

b. For any leak subject to section 32.3.f., which cannot be readily repaired within 1 hour after detection, the following records shall be kept:

1. The name of the leaking equipment;

2. The date and time the leak is detected;

3. The action taken to repair the leak; and

4. The date and time the leak is repaired.

32.7. Reporting. -- The owner or operator of any facility containing sources subject to this section 32. shall comply with the requirements in sections 5.1. and 5.2. of this subpart.

§45-21-33. Pneumatic Rubber Tire Manufacturing.

33.1. Applicability.

a. This section 33. applies to the following operations in all pneumatic rubber tire manufacturing facilities:

1. Undertread cementing;

2. Tread-end cementing;

3. Bead cementing; and

4. Green tire spraying.

b. The provisions of this section 33. do not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs. This exemption applies only to tires produced on equipment separate from normal production lines for passenger-type tires.

33.2. Definitions. -- As used in this section 33., all terms not defined herein shall have the meaning given them in section 2.

a. "Bead cementing operation" means the system that is used to apply cement to the bead rubber before or after it is wound into its final, circular form. A bead cementing operation consists of a cement application station, such as a dip tank, spray booth and nozzles, cement trough and roller or swab applicator, and all other equipment necessary to apply cement to wound beads or bead rubber and to allow evaporation of solvent from cemented beads.

b. "Green tire" means an assembled, uncured tire.

c. "Green tire spraying operation" means the system used to apply a mold-release agent and lubricant to the inside and/or outside of green tires to facilitate the curing process and to prevent rubber from sticking to the curing press. A green tire spraying operation consists of a booth where spraying is performed, the spray application station, and related equipment, such as the lubricant supply system.

d. "Passenger-type tire" means an agricultural, airplane, industrial, mobile home, light- or medium-duty truck, or passenger vehicle tire with a bead diameter up to 50.8 centimeters (cm) (20.0 inches [in.]) and cross-sectional dimension up to 32.5 cm (12.8 in.).

e. "Pneumatic rubber tire manufacturing" means the production of

pneumatic rubber passenger-type tires on a mass-production basis.

f. "Sidewall cementing operation" means the system used to apply cement to a continuous strip of sidewall component or any other continuous strip component (except combined tread/sidewall component) that is incorporated into the sidewall of a finished tire. A sidewall cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to allow evaporation of solvent from the cemented rubber.

g. "Tread-end cementing operation" means the system used to apply cement to one or both ends of the tread or combined tread/sidewall component. A tread end cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread ends and to allow evaporation of solvent from the cemented tread ends.

h. "Undertread cementing operation" means the system used to apply cement to a continuous strip of tread or combined tread/sidewall component. An undertread cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread or combined tread/sidewall strips and to allow evaporation of solvent from the cemented tread or combined tread/sidewall.

i. "Water-based green tire spray" means any mold release agent and lubricant applied to the inside or outside of green tires that contains 12 percent or less, by weight, of VOC as sprayed.

33.3. Standards.

a. Undertread cementing operations. -- The owner or operator of an undertread cementing operation subject to this section 33. shall:

1. Install and operate a capture and control system for emissions from the undertread cementing operation that achieves an overall emission reduction of at least 75 percent calculated according to the procedures in Section 44.; or

2. Meet the equipment design and performance specifications in 40 CFR 60.543(j)(1), (2), and (4) through (6), or under paragraphs (j)(1) and (3) through (6), and conduct a control device efficiency performance test to determine compliance as described under paragraph (j)(7);, or

3. Maintain total (uncontrolled) VOC use less than or equal to

the levels specified in 40 CFR 60.542(a)(1)(ii)(A) through (E).

b. Sidewall cementing operations. -- The owner or operator of a sidewall cementing operation subject to this section 33. shall:

1. Install and operate a capture and control system for emissions from the sidewall cementing operation that achieves an overall emission reduction of at least 75 percent calculated according to the procedures in section 44. of this subpart; or

2. Meet the equipment design and performance specifications in 40 CFR 60.543(j)(1), (2), and (4) through (6), or under paragraphs (j)(1) and (3) through (6), and conduct a control device efficiency performance test to determine compliance as described under paragraph (j)(7); or

3. Maintain total (uncontrolled) VOC use less than or equal to the levels specified in 40 CFR 60.542(a)(2)(ii)(A) through (E).

c. Alternate standard for undertread cementing and sidewall cementing.

1. The owner or operator of each undertread cementing and sidewall cementing operation at rubber tire manufacturing plants that meets the criteria in sections 33.3.c.2.A. through 33.3.c.2.C. of this section shall have the option of complying with the alternate standard in 40 CFR 60.542a in lieu of the standards in sections 33.3.a. and 33.3.b. The election of complying with this section 33.3.c.1. shall be irreversible.

2. The undertread cementing and sidewall cementing operation for which election of the alternate standard is made:

A. Commenced construction, modification, or reconstruction after January 20, 1983, and before September 15, 1987;

B. Uses 25 g or less of VOC per tire per month; and

C. Does not use a control device to control VOC emissions from the operations complying with sections 33.3.c.2.A. and 33.3.c.2.B.

d. Green tire spraying operations.

1. Water-based sprays. -- The owner or operator of a green tire spraying operation subject to this section 33. and where only water-based sprays are used shall meet the g/tire limits in 40 CFR 60.542(a)(5)(i) and (ii).

2. Organic solvent-based sprays. -- The owner or operator of a green tire spraying operation subject to this section 33. and where only organic solvent-based sprays are used shall:

A. Install and operate a capture and control system for emissions from the green tire spraying operation that achieves an overall emission reduction of at least 75 percent calculated according to the procedures in section 44.; or

B. Meet the equipment design and performance specifications in 40 CFR 60.543(j)(1), (2), and (4) through (6), or under paragraphs (j)(1) and (3) through (6), and conduct a control device efficiency performance test to determine compliance as described under paragraph (j)(7); or

C. Meet the g/tire limits in 40 CFR 60.542(a)(6)(ii)(A) through (E).

3. Both water-based and organic solvent-based sprays. -- The owner or operator of a green tire spraying operation subject to this section 33. and where both water-based and organic solvent-based sprays are used shall meet the emission limits in 40 CFR 60.542(a)(7).

e. Tread-end cementing. -- The owner or operator of a tread-end cementing operation subject to this section 33. shall:

1. Install and operate a capture and control system for emissions from these operations that achieves an overall emission reduction of at least 75 percent calculated according to the procedures in section 44.; or

2. Meet the g/tire limit in 40 CFR 60.542(a)(3).

f. Bead cementing. -- The owner or operator of a bead cementing operation subject to this section 33. shall:

1. Install and operate a capture and control system for emissions from these operations that achieves an overall emission reduction of at least 75 percent calculated according to the procedures in section 44.; or

2. Meet the g/bead limit in 40 CFR 60.542(a)(4).

33.4. Compliance procedures. -- The compliance procedures in this section 33.4. shall be used to determine compliance with the standards in section 33.3. of this section.

a. Tread-end cementing/no VOC control device. -- An owner or operator of a tread-end cementing operation who does not use a VOC control device and who is seeking to comply with the g/tire standards in section 33.3.e.2. shall:

1. Determine the density and weight fraction VOC (including dilution VOC) of each cement by analysis of the cement using Method 24 (40 CFR Part 60, Appendix A).

2. Calculate the total mass of VOC used at the tread-end cementing operation for the day (M_d) as follows:

A. For each tread-end cementing operation subject to this section 33. for which cement is delivered in batch or via a distribution system that serves only that tread-end cementing operation, use the following equation to calculate the total mass of VOC used per day (M_d):

$$M_d = \sum_{i=1}^{a} L_{c_i} D_{c_i} W_{o_i}$$

where:

a = the number of different cements used during the day that are delivered in batch or via a distribution system that serves only a single operation subject to this section 33.

L_c = volume of cement or spray material used for a day (liters);

D_c = density of cement (grams per liter);

W_o = weight fraction of VOC in a cement.

B. For each tread-end cementing operation subject to this section 33. for which cement is delivered via a common distribution system that also serves other operations that may or may not be subject to this section 33.:

i. Calculate the total mass of VOC used for all operations served by the common distribution system for the day (M):

$$M = \sum_{i=1}^{b} L_{c_i} D_{c_i} W_{o_i}$$

where:

b = the number of different cements used during the day that are delivered via a common distribution system that also serves other operations.

L_c = volume of cement or spray material used for a day (liters);

D_c = density of cement (grams per liter);

W_0 = weight fraction of VOC in a cement.

ii. Determine the fraction (F_0) of M used at the operation subject to this section 33. by comparing the production records and process specifications for the material cemented at the subject operation for the day to the production records and process specifications for all the material cemented at all other operations served by the common distribution system for the day.

iii. Calculate the total mass of VOC used at the operation subject to this section 33. for the day (M_d):

$$M_d = MF_o$$

where:

M = total mass of VOC used for a day by all operations served by a common cement distribution system (grams);

F_0 = fraction of total mass of VOC used in a day by all operations served by a common cement distribution system that is used by a particular operation subject to this section 33. served by the common distribution system.

3. Determine the total number of tread or combined tread/sidewall components that receive an application of cement for the day at the tread-end cementing operation subject to this section 33. (T_0).

4. Calculate the mass of VOC used per tire cemented at the tread-end cementing operation subject to this section 33. for the day (G):

$$G = \frac{M_d}{T_o}$$

5. Calculate the mass of VOC emitted per tire cemented at the tread-end cementing operation subject to this section 33. for the day (N):

$$N = G$$

b. Bead cementing/no VOC control device. -- An owner or operator of a bead cementing operation who does not use a VOC control device and who is seeking to comply with the g/bead standard in section 33.3.f.2. shall:

1. Determine the density and weight fraction VOC of each cement as specified under section 33.4.a.1.

2. Calculate the total mass of VOC used at the bead cementing operation subject to this section 33. for the day (M_d) as specified under section 33.4.a.2.

3. Determine the number of beads cemented at the operation subject to this section 33. for the day (B_d) using production records; B_d equals the number of beads that receive an application of cement for the day.

4. Calculate the mass of VOC used per bead cemented at the operation subject to this section 33. (G_b):

$$G_b = \frac{M_d}{B_d}$$

5. Calculate the mass of VOC emitted per bead cemented at the operation subject to this section 33. for the day (N_b):

$$N_b = G_b$$

c. Tread-end cementing and bead cementing/VOC destruction device. For each tread-end cementing operation or each bead cementing operation that uses a VOC control device that destroys VOC (e.g., an incinerator), the owner or operator shall use the following procedure to determine compliance with the g/tire or g/bead standards in sections 33.3.e.2. and 33.3.f.2.:

1. Calculate the mass of VOC used per tire (G) at the tread-end cementing operation subject to this section 33. as specified under sections 33.4.a.1. through 33.4.a.4., or calculate the mass of VOC used per bead cemented (G_b) at the bead cementing operation subject to this section 33. as specified in sections 33.4.b.1. through 33.4.b.4.

2. Calculate the mass of VOC emitted per tire cemented (N) or per bead cemented (N_b) at the operation subject to this section 33.:

$$N = G(1-R)$$
$$N_b = G_b(1-R)$$

3. For the initial compliance test, determine the overall reduction efficiency (R) as specified in sections 33.4.c.3.A. through 33.4.c.3.C. below.

A. The owner or operator shall construct a temporary enclosure around the application and drying areas during the test for the purpose of capturing fugitive VOC emissions. The enclosure must be maintained at a negative pressure to ensure that all evaporated VOC are measurable. Determine the fraction (F_c) of total VOC used at the operation subject to this section 33. that enters the control device:

$$F_c = \frac{\sum_{i=1}^{m} C_{b_i} Q_{b_i}}{\sum_{i=1}^{m} C_{b_i} Q_{b_i} + \sum_{i=1}^{n} C_{f_i} Q_{f_i}}$$

where:

m = the number of vents from the operation subject to this section 33. to the control device;

n = the number of vents from the operation subject to this section 33. to the atmosphere and from the temporary enclosure;

C_b = concentration of VOC in gas stream in vents before a control device (parts per million by volume);

Q_b = volumetric flow rate in vents before a control device (dry standard cubic meters per hour);

C_f = concentration of VOC in each gas stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (parts per million by volume); and

Q_f = volumetric flow rate of each stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (dry standard cubic meters per hour).

B. Determine the destruction efficiency of the control device (E) by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device:

$$E = \frac{\sum_{i=1}^{m} C_{b_i} Q_{b_i} - \sum_{i=1}^{p} C_{a_i} Q_{a_i}}{\sum_{i=1}^{m} C_{b_i} Q_{b_i}}$$

where:

m = the number of vents from the operation subject to this section 33. to the control device;

p = the number of vents from the operation subject to this section 33. after the control device;

C_b = concentration of VOC in gas stream in vents before a control device (parts per million by volume);

Q_b = volumetric flow rate in vents before a control device (dry standard cubic meters per hour);

C_a = concentration of VOC in gas stream in vents after a control device (parts per million by volume); and

Q_a = volumetric flow rate in vents after a control device (dry standard cubic meters per hour).

C. Determine the overall reduction efficiency (R):

$$R = EF_c$$

4. If subsequent compliance tests are required, the owner or operator may use the most recently determined overall reduction efficiency (R) if the conditions under which the capture system and control device are being operated have not changed since R was most recently determined. If the conditions under which the capture system and control device are being operated are different from those in effect when R was determined, the owner or operator must re-establish R as specified in sections 33.4.c.3.A. through 33.4.c.3.C.

d. Tread-end cementing and bead cementing/VOC recovery device. -- For each tread-end cementing operation and each bead cementing operation subject to this section 33. that uses a VOC emission reduction system with a control device that recovers VOC (e.g., a carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the g/tire or g/bead standards specified under sections 33.3.e.2. and 33.3.f.2.

1. Calculate the mass of VOC used per tire cemented at the operation subject to this section 33. for the day (G) as specified under sections 33.4.a.1. through 33.4.a.4., or the mass of VOC used per bead cemented for the day (G_b) as specified in sections 33.4.b.1. through 33.4.b.4.

2. Calculate the total mass of VOC recovered from the operation subject to this section 33. for the day (M_r):

$$R = \frac{M_r}{M_o}$$

3. Calculate the mass of VOC emitted per tire cemented at the operation subject to this section 33. for the day (N) or mass of VOC emitted per bead cemented at the operation subject to this section 33. for the day (N_b):

$$N = G(1-R)$$
$$N_b = G_b(1-R)$$

33.5. Monitoring requirements. -- Each owner or operator subject to the provisions of this section 33. shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

a. Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder for the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of ±1 percent of the combustion temperature being measured in °C or ±0.5 °C, whichever is greater.

b. Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder, for the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of ±1 percent of the combustion temperature being measured in °C or ±0.5 °C, whichever is greater.

c. Where a carbon adsorber is used for VOC emission reduction, an organics monitoring device used to indicate the concentration level of organic compounds based on a detection principle such as infrared, photoionization, or thermal conductivity, equipped with a continuous recorder, for the outlet of the carbon bed.

33.6. Recordkeeping.

a. Each owner or operator of a facility subject to this section 33. that uses a thermal incinerator shall maintain the following records:

1. Continuous records of the temperature of the gas stream in the combustion zone of the incinerator; and

2. Records of all 3-hour periods of operation for which the

average temperature of the gas stream in the combustion zone was more than 28°C (50°F) below the combustion zone temperature measured during the most recent determination of the destruction efficiency of the thermal incinerator that demonstrated that the facility was in compliance.

b. Each owner or operator of a facility subject to this section 33. that uses a catalytic incinerator shall maintain the following records:

1. Continuous records of the temperature of the gas stream both upstream and downstream of the incinerator;

2. Records for all 3-hour periods of operation for which the average temperature measured before the catalyst bed is more than 28°C (50°F) below the gas stream temperature measured before the catalyst bed during the most recent determination of destruction efficiency of the catalytic incinerator that demonstrated that the facility was in compliance; and

3. Records of all 3-hour periods for which the average temperature difference across the catalyst bed is less than 80 percent of the temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that demonstrated that the facility was in compliance.

c. Each owner or operator of a facility subject to this section 33. that uses a carbon adsorber shall maintain continuous records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases is more than 20 percent greater than the reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the facility was in compliance.

33.7. Reporting. -- The owner or operator of any facility containing emission sources subject to this section must comply with the reporting requirements in sections 5.1. and 5.2.

§45-21-34. Graphic Arts Systems.

34.1. Applicability.

a. This section 34. applies to any packaging rotogravure, publication rotogravure, or flexographic printing press at any facility whose maximum theoretical emissions of volatile organic compound (VOC) without control devices from all printing presses are greater than or equal to 90.7 megagrams (Mg) (100 tons) per year. An owner or operator of a facility whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 34.7.a. ~~Any facility that becomes subject to the provisions of this section 34. by exceeding this applicability threshold shall remain subject to these provisions even if its emissions later fall below the applicability threshold.~~

b. This section does not apply to facilities that use only petroleum-based solvents that contain chlorine.

34.2. Definitions. As used in this section 34., all terms not defined herein shall have the meaning given them in section 2.

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

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

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

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

1. Catalogues, including mail order and premium;

2. Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes;

3. Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material;

4. Magazines, Books;

5. Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars magazine inserts, and shopping news;

6. Newspapers, magazine and comic supplements for newspapers, and pre-printed newspaper inserts, including hi-fi and spectacolor rolls and sections;

7. Periodicals; or

8. Telephone and other directories, including business reference services.

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

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

34.3. Standards.

a. No owner or operator of a packaging rotogravure or flexographic printing press subject to this section 34. shall apply any coating or ink unless the VOC content is equal to or less than one of the following:

1. 40 percent VOC by volume of the coating or ink, minus water, as applied;

2. 25 percent VOC by volume of the volatile content in the coating or ink, as applied; or

3. 0.5 kilogram (kg) VOC per kg (0.5 pound [lb] VOC per lb) coating solids, as applied.

b. No owner or operator of a publication rotogravure

printing press subject to this section 34. shall apply any coating or ink unless the VOC content is equal to or less than one of the following:

1. 40 percent VOC by volume of the coating or ink, minus water, as applied; or

2. 25 percent VOC by volume of the volatile content in the coating or ink, as applied.

c. As an alternative to compliance with the limits in section 34.3.a. or section 34.3.b., an owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing press may comply with the requirements of this section 34. by meeting the requirements of section 34.4. or section 34.5.

34.4. Daily-weighted average limitations.

a. No owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing press shall apply coatings or inks on the subject printing press unless the daily-weighted average, by volume, VOC content of all coatings and inks, as applied, each day on the subject printing press does not exceed the limitation specified in either section 34.3.a.1. or section 34.3.b.1. [as determined by section 34.4.d.]; section 34.3.a.2. or section 34.3.b.2. [as determined by section 34.4.e.]; or, in the case of packaging rotogravure or flexographic printing, section 34.3.a.3. [as determined by section 34.4.f.] of this section 34.

b. An owner or operator may comply with the daily-weighted average limitation by grouping coatings or inks used on a printing press into two categories that meet the conditions in sections 34.4.b.1. and 34.4.b.2. of this section. Any use of averaging between the two categories of coating or inks used on a packaging rotogravure press or on a flexographic press requires compliance with the emission standard in section 34.3.a.3., as determined by the equation in section 34.4.f.

1. The daily-weighted average VOC content for the first category must comply with section 34.3.a.1. or section 34.3.b.1., as determined by applying the equation in section 34.4.d. to the coatings or inks in this first category.

2. The daily weighted-average VOC content for the second category must comply with section 34.3.a.2. or section 34.3.b.2., as determined by applying the equation in section 34.4.e. to the coatings or inks in this second category.

c. Compliance with this section 34.4. shall be demonstrated through

the applicable coating or ink analysis test methods and procedures specified in section 42. and the recordkeeping and reporting requirements specified in section 34.7.c.

d. The following equation shall be used to determine if the weighted average VOC content of all coatings and inks, as applied, each day on the subject printing press exceeds the limitation specified in section 34.3.a.1. or section 34.3.b.1.:

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

where:

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

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

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

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

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

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

e. The following equation shall be used to determine if the weighted average VOC content of all coatings and inks, as applied, each day on the subject printing press exceeds the limitation specified in section 34.3.a.2. or section 34.3.b.2.:

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

where:

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

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

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

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

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

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

f. The following equation shall be used to determine if the weighted average VOC content of all coatings and inks, as applied, each day on the subject printing press exceeds the limitation specified in section 34.3.a.3.:

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

where:

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

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

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

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

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

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

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

34.5. Control devices. -- No owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing press equipped with a control system shall operate the printing press unless the owner or operator meets the following requirements:

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

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

c. Any other VOC emission control device is used to reduce the VOC emissions delivered from the capture system to the control device by at least 90 percent; and

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

1. 75 percent for a publication rotogravure printing press;

2. 65 percent for a packaging rotogravure printing press; or

3. 60 percent for a flexographic printing press.

34.6. Test methods. -- The VOC content of each coating and ink and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in sections 42. and 44. to establish the records required under section 34.7.

34.7. Recordkeeping and reporting.

a. Requirements for exempt sources. -- By one year from the effective date of this regulation, any owner or operator of a printing press that is exempted from this section 34. because of the criteria in section 34.1. shall comply with the following:

1. Initial certification. -- The owner or operator shall certify to the director that the facility is exempt under the provisions of section 34.1. Such certification shall include:

A. The name and location of the facility;

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

C. A declaration that the facility is exempt from this section 34. because of the criteria in section 34.1.; and

D. Calculations demonstrating that total potential emissions of VOC from all flexographic and rotogravure printing presses at the facility are and will be less than 90.7 Mg (100 tons) per calendar year before the application of capture systems and control devices. Total potential emissions of VOC for a flexographic or rotogravure printing facility is the sum of potential emissions of VOC from each flexographic and rotogravure printing press at the facility. The following equation shall be used to calculate total potential emissions of VOC per

calendar year before the application of capture systems and control devices for each flexographic and rotogravure printing press at the facility:

$$E_p = A \times B$$

where:

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

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

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

2. Recordkeeping. -- The owner or operator shall collect and record all of the following information each year for each printing press and maintain the information at the facility for a period of 3 years.

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

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

C. The total potential emissions as calculated in section 34.7.a.1.B. using VOC content for that year.

3. Reporting. -- Any record showing that total potential emissions of VOC from all printing presses exceed 90.7 Mg (100 tons) in any calendar year before the application of capture systems and control devices shall be reported by sending a copy of such record to the director within 30 days after the exceedance occurs.

b. Requirements for sources using complying coatings or inks. -- Any owner or operator of a printing press subject to this section 34. and complying by

means of use of complying coatings or inks, shall comply with the following:

1. Initial certification. -- By one year from the effective date of this regulation, or upon initial startup of a new printing press, or upon changing the method of compliance for an existing subject printing press from daily-weighted averaging or control devices to use of complying coatings or inks, the owner or operator of a subject printing press shall certify to the director that the printing press will be in compliance with section 34.3.a. or section 34.3.b. on and after one year from the effective date of this regulation, or on and after the initial startup date. Such certification shall include:

A. The name and location of the facility;

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

C. Identification of subject sources;

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

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

2. Recordkeeping. -- By one year after the effective date of this regulation, or on and after the initial startup date, the owner or operator of a printing press subject to the limitations of this section 34. and complying by means of section 34.3.a.1. or section 34.3.b.1. shall collect and record all of the following information each day for each coating line and maintain the information at the facility for a period of 3 years:

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

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

3. Reporting.

A. Any record showing an exceedance of the VOC contents of section 34.3.a. or section 34.3.b. shall be reported by the owner or operator of the subject printing press to the director within 30 days following the exceedance; and

B. At least 30 calendar days before changing the method

of compliance with this section 34. from the use of complying coatings to daily-weighted averaging or control devices, the owner or operator shall comply with all requirements of section 34.7.c.1. or section 34.7.d.1., respectively. Upon changing the method of compliance with this section 34. from the use of complying coatings to daily-weighted averaging or control devices, the owner or operator shall comply with all requirements of section 34.7.c. or section 34.7.d., respectively.

c. Requirements for sources using daily-weighted averaging. -- Any owner or operator of a printing press subject to the limitations of this section 34. and complying by means of daily-weighted averaging shall comply with the following:

1. Initial certification. -- By one year after the effective date of this regulation, or upon initial startup of a new printing press, or upon changing the method of compliance for an existing subject press from use of complying coating or control devices to daily-weighted averaging, the owner or operator of the subject printing press shall certify to the director that the printing press will be in compliance with section 34.4. on and after one year after the effective date of this regulation, or on and after the initial startup date. Such certification shall include:

A. The name and location of the facility;

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

C. The name and identification of each printing press which will comply by means of section 34.4.;

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

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

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

G. The method by which the owner or operator will create and maintain records each day as required in section 34.7.c.2.; and

H. An example of the format in which the records required in section 34.7.c.2. will be kept.

2. Recordkeeping. -- On and after one year after the effective date of this regulation, or on and after the initial startup date, the owner or operator of a printing press subject to the limitations of this section 34. and complying by means of daily-weighted averaging shall collect and record all of the following information each day for each printing press and maintain the information at the facility for a period of 3 years:

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

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

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

3. Reporting. -- On and after one year after the effective date of this regulation, the owner or operator of a subject printing press shall notify the director in the following instances:

A. Except as provided in section 9.3., any record showing non-compliance with section 34.4. shall be reported by sending a copy of such record to the director within 30 days following the occurrence; and

B. At least 30 calendar days before changing the method of compliance with this section 34. from daily-weighted averaging to use of complying coatings or control devices, the owner or operator shall comply with all requirements of section 34.7.b.1. or section 34.7.d.1., respectively. Upon changing the method of compliance with this section 34. from daily-weighted averaging to use of complying coatings or control devices, the owner or operator shall comply with all requirements of section 34.7.b. or section 34.7.c., respectively.

d. Requirements for sources using control devices. -- Any owner or operator of a printing press subject to this section 34. and complying by means of control devices shall comply with section 4.5. and the following:

1. Initial certification. -- By one year from the effective date of this regulation, or upon initial startup of a new printing press, or upon changing the method of compliance for an existing printing press from use of complying coatings or daily-weighted averaging to control devices, the owner or operator of the subject printing press shall perform all tests and submit to the director the results of all tests and calculations necessary to demonstrate that the subject printing press will be in compliance with section 34.5., on and after one year from the effective

date of this regulation, or on and after the initial startup date.

2. Recordkeeping. -- On and after one year from the effective date of this regulation, or on and after the initial startup date, the owner or operator of a printing press subject to the limitations of this section 34. and complying by means of control devices shall collect and record all of the following information each day for each printing press and maintain the information at the facility for a period of 3 years:

A. Control device monitoring data;

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

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

3. Reporting. -- On and after one year from the effective date of this regulation, the owner or operator of a subject printing press shall notify the director in the following instances:

A. Except as provided in section 9.3., any record showing non-compliance with section 34.5. shall be reported by sending a copy of such record to the director within 30 days following the occurrence; and

B. At least 30 calendar days before changing the method of compliance with this section 34. from control devices to use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of section 34.7.b.1. or section 34.7.c.1., respectively. Upon changing the method of compliance with this section 34. from control devices to use of complying coatings or daily-weighted averaging, the owner or operator shall comply with all requirements of section 34.7.b. or section 34.7.c., respectively.

45-21-35. Petroleum Solvent Dry Cleaners.

35.1. Applicability.

a. This section 35. applies to petroleum solvent dry cleaning facilities.

b. Any petroleum solvent dry cleaning facility that consumes less than 123,000 liters (L) (32,500 gallons [gal]) of petroleum solvent per year is subject only to the requirements of section 35.5.a. ~~Any facility that becomes subject to all of the provisions of this section 35. by exceeding this applicability threshold shall remain subject to these provisions even if its consumption of petroleum solvent later falls below the applicability threshold.~~

c. This section does not apply to facilities that use only petroleum-based solvents that contain chlorine.

35.2. Definitions. -- As used in this section 35., all terms not defined herein shall have the meaning given them in section 2.

a. "Filter cartridge" means a replaceable filter unit containing filtration paper and carbon or carbon only.

b. "Perceptible leaks" means any petroleum solvent vapor or liquid leaks that are conspicuous from visual observation or that bubble after application of a soap solution, such as pools or droplets of liquid, open containers of solvent, or solvent-laden waste standing open to the atmosphere.

c. "Petroleum solvent cartridge filtration system" means a process in which soil-laden solvent is pumped under pressure from a washer through a sealed vessel containing filter cartridges that remove entrained solids and impurities from the solvent.

d. "Petroleum solvent dry cleaning facility" means a facility engaged in the cleaning of fabrics, clothing, and other articles in a petroleum solvent by means of one or more washes in the solvent, extraction of excess solvent by spinning, and drying by tumbling in an airstream. Equipment at the facility includes, but is not limited to, any petroleum solvent washer, dryer, solvent filter system, settling tank, vacuum still, and any other container or conveyor of petroleum solvent.

e. "Settling tank" means a container, and any associated piping and ductwork, that gravimetrically separates oils, grease, and dirt from petroleum solvent.

f. "Solvent filter" means a discrete solvent filter unit containing a porous medium that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in the installation of this device.

g. "Solvent recovery dryer" means a class of dry cleaning dryers that employs a condenser to condense and recover solvent vapors evaporated in a closed-loop stream of heated air, together with the piping and ductwork used in the installation of this device.

h. "Standard dryer" means a device that dries dry-cleaned articles by tumbling in a heated airstream.

i. "Still" means a device used to volatilize, separate, and recover petroleum solvent from contaminated solvent, together with the piping and ductwork used in the installation of this device.

j. "Washer" means a machine which agitates fabric articles in a petroleum solvent bath and spins the articles to remove the solvent, together with the piping and ductwork used in the installation of this device.

35.3. Standards.

a. Fugitive emissions. -- The owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. shall ensure that:

1. There are no perceptible leaks from any portion of the equipment; and

2. All washer lint traps, button traps, access doors, and other parts of the equipment where solvent may be exposed to the atmosphere are kept closed at all times except when opening is required for proper operation or maintenance.

b. Leak repair. -- The owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. shall repair any perceptible leaks in any portion of the dry cleaning equipment within 3 working days after the leak is detected. If necessary repair parts are not on hand, the owner or operator shall order these parts within 3 working days and repair the leaks no later than 3 working days after the parts arrive.

c. Dryers. -- The owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. shall:

1. Limit the volatile organic compound (VOC) emissions from each standard dryer to 1.6 kilograms (kg) (3.5 pounds [lb]) VOC per 45 kg (100 lb)

dry weight of articles dry cleaned; or

2. Install, maintain, and operate a solvent-recovery dryer such that the dryer remains closed and the recovery phase continues until a final recovered solvent flow rate of no greater than 50 milliliters per minute (ml/min) (0.013 gallons per minute [gal/min]) is attained.

d. Filtration systems. -- The owner or operator of a petroleum solvent filtration system subject to this section 35. shall:

1. Reduce the VOC content in filtration waste to 1 kg (2.2 lb) VOC per 100 kg (220 lb) dry weight of articles dry cleaned; or

2. Install, maintain, and operate a cartridge filtration system according to the manufacturer's instructions, and drain all filter cartridges in their sealed housings for 8 hours or more before their removal.

35.4. Test methods and procedures.

a. To be in compliance with section 35.3.c.1., each owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. shall:

1. Calculate the weight of VOCs vented from the dryer emission control device calculated by using Methods 1, 2, and 25A of 40 CFR Part 60, Appendix A with the following specifications:

A. Field calibration of the flame ionization analyzer with propane standards;

B. Laboratory determination of the ratio of the flame ionization analyzer response to a given parts per million (ppm) by volume concentration of propane to the response to the same ppm concentration of the VOCs to be measured; and

C. Determination of the weight of VOCs vented to the atmosphere by:

i. Multiplying the ratio determined in section 35.4.a.1.B. by the measured concentration of VOC gas (as propane) as indicated by the flame ionization analyzer response output record;

ii. Converting the ppm by volume value calculated in section 35.4.a.1.C.i. into a mass concentration value for the VOCs present; and

iii. Multiplying the mass concentration value calculated in section 35.4.a.1.C.ii. by the exhaust flow rate determined by using Methods 1 and 2 of 40 CFR Part 60, Appendix A;

2. Calculate the dry weight of articles dry cleaned; and

3. Repeat sections 35.4.a.1. and 35.4.a.2. for normal operating conditions that encompass at least 30 dryer loads, which total not less than 1,800 kg (4,000 lb) dry weight and represent a normal range of variations in fabrics, solvents, load weights, temperatures, flow rates, and process deviations.

b. To determine initial compliance with section 35.3.c.2., the owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. shall:

1. Verify that the flow rate of recovered solvent from the solvent-recovery dryer at the termination of the recovery phase is no greater than 50 ml/min (0.013 gal/min) by using the following procedure:

A. Determine the appropriate location for measuring the flow rate of recovered solvent; the suggested point is at the outlet of the solvent-water separator;

B. Near the end of the recovery cycle, divert the flow of recovered solvent to a graduated cylinder;

C. Continue the cycle until a flow rate of 50 ml/min (0.013 gal/min) is reached; and

D. Record the type of articles dry cleaned and the length of the cycle.

2. To determine initial compliance with section 35.3.c.2., conduct the procedure in section 35.4.b.1. for at least 50 percent of the dryer loads over a period of no less than 2 consecutive weeks.

c. To be in compliance with section 35.3.d., the owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. shall:

1. Calculate the weight of volatile organic compounds contained in each of at least five 1 kg (2.2 lb) samples of filtration waste material taken at intervals of at least 1 week, by employing ASTM D322-80 (Standard Test Method for Gasoline Diluent in Used Gasoline Engine Oils by Distillation);

2. Calculate the total dry weight of articles dry cleaned during the intervals between removal of filtration waste samples, as well as the total mass of filtration waste produced in the same period; and

3. Calculate the weight of VOCs contained in filtration waste material per 100 kg (220 lb) dry weight of articles dry cleaned.

d. Compliance with section 35.3. requires that each owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. make weekly inspections of washers, dryers, solvent filters, settling tanks, vacuum stills, and all containers and conveyors of petroleum solvent to identify perceptible VOC vapor or liquid leaks.

35.5. Recordkeeping requirements.

a. The owner or operator of a petroleum solvent dry cleaning facility claiming exemption from this section 35. shall maintain records of annual solvent consumption in a readily accessible location for at least 3 years to document whether the applicability threshold in section 35.1.b. has been exceeded.

b. The owner or operator of a petroleum solvent dry cleaning facility subject to this section 35. shall maintain the following records in a readily accessible location for at least 3 years:

1. Records of the weight of VOCs vented from the dryer emission control device calculated according to section 35.4.a.1.;

2. Records of the dry weight of articles dry cleaned for use in the calculations required in sections 35.4.a., 35.4.b., and 35.4.c.;

3. Records of the weight of VOCs contained in the filtration waste samples required by section 35.4.c.1.; and

4. Records of the weight of VOCs in filtration waste material per 100 kg (220 lb) dry weight of articles dry cleaned.

35.6. Reporting requirements. -- The owner or operator of any facility containing sources subject to this section 35. shall:

a. Comply with the initial compliance certification requirements of section 5.1.; and

b. Comply with the requirements of section 5.2. for excess emissions related to the control devices required to comply with sections 35.3.b., 35.3.c.2., and 35.3.d.2.

§45-21-36. Perchloroethylene Dry Cleaning.

36.1. Applicability.

a. This section 36. applies to any perchloroethylene dry cleaning facility.

b. Perchloroethylene dry cleaning facilities (1) that are coin-operated, (2) where an adsorber cannot be accommodated because of inadequate space, or (3) with insufficient steam capacity to desorb adsorbers are exempt from the provisions of sections 36.3.a. and 36.3.b.

c. Any other facilities that the commission determines are demonstrated to experience hardships that justify exclusion are exempt from the provisions of sections 36.3.a. and 36.3.b. provided that their exemption is approved by the U.S. EPA.

36.2. Definitions. -- As used in this section 36., all terms not defined herein shall have the meaning given them in section 2.

"Dry cleaning facility" means a facility engaged in the cleaning of fabrics in an essentially nonaqueous solvent by means of one or more washes in solvent, extraction of excess solvent by spinning, and drying by tumbling in an airstream. The facility includes, but is not limited to, any washer, dryer, filter and purification system, waste disposal system, holding tank, pump, and attendant piping and valves.

36.3. Standards. -- The owner or operator of a perchloroethylene dry cleaning facility subject to this section 36. shall:

a. Vent the entire dryer exhaust through a properly functioning carbon adsorption system or equally effective control device;

b. Emit no more than 100 parts per million volumetric (ppmv), of volatile organic compound (VOC) from the dryer control device before dilution;

c. Maintain the system so as to prevent the leaking of liquid VOC and prevent perceptible vapor losses from gaskets, seals, ducts, and related equipment;

d. Cook or treat all diatomaceous earth filters so that the residue contains 25 kilograms (kg) (55 pounds [lb]) or less of VOC per 100 kg (220 lb) of wet waste material;

e. Reduce the volatile organic compounds from all solvent stills to 60 kg (132 lb) or less per 100 kg (220 lb) of wet waste material;

f. Drain all filtration cartridges in the filter housing for at least 24 hours before discarding the cartridges; and

g. Dry or store all drained cartridges so that VOC is not emitted to the atmosphere.

36.4. Compliance provisions.

a. Compliance with sections 36.3.a., 36.3.f., and 36.3.g. shall be determined by means of a visual inspection.

b. Compliance with section 36.3.c. shall be determined by means of a visual inspection of the following components:

1. Hose connections, unions, couplings and valves;

2. Machine door gaskets and seatings;

3. Filter head gasket and seating;

4. Pumps;

5. Base tanks and storage containers;

6. Water separators;

7. Filter sludge recovery;

8. Distillation unit;

9. Diverter valves;

10. Saturated lint from lint basket; and

11. Cartridge filters.

c. Compliance with section 36.3.b. shall be determined by:

1. A test as described in EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; or

2. Proof of the proper installation, operation, and maintenance of equipment that has been demonstrated to be adequate to meet the emission limit in section section 36.3.b.

d. Compliance with sections 36.3.d. and 36.3.e. shall be determined by means of the test method in section 36.5.

36.5. Test Methods. -- The following test method shall be used to determine compliance with sections 36.3.d. and 36.3.e.:

a. Applicability of the method. -- This method is applicable to the sampling and determination of perchloroethylene in wet waste material from diatomaceous earth filters and solvent stills at perchloroethylene dry cleaners on a weight percent basis.

b. Principle. -- Samples are obtained from waste material at a perchloroethylene dry cleaning facility. A known sample mass is mixed with water and placed in a glass still equipped with a Liebig straight-tube-type reflux condenser and a Bidwell-Sterling-type graduated trap. Water and perchloroethylene in the sample are separated through repeated distillation until all of the perchloroethylene has been recovered in the trap and the volume recorded. The mass of perchloroethylene collected is determined from the product of its volume and specific gravity. The total weight of perchloroethylene obtained is divided by the total weight of sample analyzed to obtain the perchloroethylene content of the wet waste residue.

c. Apparatus. -- The following apparatus shall be used:

1. Flask. -- Round bottom, short-necked flask having a nominal capacity of 500 milliliters (ml).

2. Condenser. -- Liebig straight-tube type, with a jacket not less than 400 mm long and with an inner tube having an outside diameter of 10 to 13 millimeters (mm).

3. Trap. -- Bidwell-Sterling type, graduated from 0 to 5 ml in 0.1-ml divisions. Calibrate at four or more points by first filling the trap with water and then adding a hydrophobic solvent with a specific gravity greater than water from a standard buret having a calibrated capacity at least equal to that of the trap. The error of the indicated volume shall not exceed 0.05 ml.

4. Heater. -- Any suitable gas burner or electric heater for the glass flask.

5. Sample container. -- Metal can with a leak proof closure,

150 ml.

d. Sampling procedure.

1. From distiller (cooker).

A. After a cycle of the perchloroethylene distilling and when the still bottoms have come approximately to room temperature (i.e., 21 to 38°C), obtain three 150-ml samples of the wet waste residue from the distiller (cooker) drain. Completely fill each of the three sample containers to prevent evaporation loss.

B. Immediately close the sample container lids securely.

C. Label the containers using waterproof and oil-proof ink.

D. Store the samples in a cool dry atmosphere.

E. Transfer the samples to the appropriate laboratory for analysis within 48 hours of obtaining the samples. The samples shall remain sealed until the time of analysis.

2. From wet waste containers.

A. Large unmixed containers. -- Using a clean sampling spoon, spatula, or other appropriate device, obtain three 150-ml samples. Each sample shall be comprised of three 50-ml subsamples, one each from the top, midpoint, and bottom of the wet waste container. Transfer the three subsamples that comprise each of the 150-ml samples to a sample container. Each of the three sample containers should be completely filled to prevent evaporation loss.

B. Small containers. -- If the waste container can be thoroughly mixed prior to sampling, mix the container contents thoroughly and obtain three 150-ml samples by pipetting. The pipette should have a capacity of at least 150 ml and should be long enough to reach within 2 cm of the bottom of the wet waste container. Each 150-ml sample should be transferred to a sample container. Each sample container should be completely filled to prevent evaporation loss.

C. Immediately close the sample container lids securely.

D. Label the containers using waterproof and oil-proof ink.

E. Store the samples in a cool dry atmosphere.

F. Transfer the samples to the appropriate laboratory for analysis within 48 hours of obtaining the samples. The samples shall remain sealed until the time of analysis.

e. Analysis procedure.

1. Conduct duplicate analyses of each sample and record the recovered perchloroethylene from each analysis.

2. For each analysis, weigh and record the weight of an empty flask and stopper (W_i) to the nearest 0.1 mg.

3. Mix each unopened sample container by shaking.

4. Open the sample container and immediately transfer approximately 20 ml of wet waste material to the flask.

5. Stopper the flask and reseal the sample container.

6. Weigh and record the weight of the flask plus added portion (d_i) to the nearest 0.1 g. The mass added to the flask shall not exceed 35 g.

7. Add water to the flask to make a total mixture volume of approximately 250 ml.

8. Fill the trap with cold water.

9. Connect the flask to the distillation trap.

10. Assemble the apparatus so that the tip of the condenser is directly over the indentation in the trap.

11. Heat the flask so that refluxing starts within 7 to 10 minutes. Adjust the rate of boiling so that the condensed distillate is discharged from the condenser at a rate of 1 to 3 drops per second.

12. From the time refluxing starts, obtain readings of the amount of perchloroethylene collected after 5, 15, and 30 minutes, and each following 15 minutes. End the test when the volume of perchloroethylene is increased by not more than 0.1 ml in a 15 minute period or the amount of perchloroethylene exceeds the trap capacity.

13. At the end of the test run turn off the heater. Allow the equipment to stand at least 30 minutes to allow the distillate to settle clear and

to cool to room temperature.

14. Read the volume of perchloroethylene collected in the trap. If the amount of perchloroethylene exceeded the calibrated capacity of the trap, report the volume of perchloroethylene as 5.0 ml plus.

f. Calculations.

1. Calculate the total mass of the sample in the flask:

$$S_i = W_i - d_i$$

where:

S_i = Weight of wet waste portion, g;
W_i = Weight of the empty flask and stopper, g; and
d_i = Weight of flask plus wet waste portion, g.

2. Calculate the total mass of perchloroethylene (f_i) collected in the trap from each analysis:

$$f_i = V_i \times D$$

where:

f_1 = Weight of perchloroethylene in the wet waste portion, g;
V_1 = Volume of perchloroethylene collected in the trap, ml; and
D = Density of perchloroethylene at 20°C, 1.6227 grams/ml.

3. Calculate the perchloroethylene content of the wet waste (R) using the following equation:

$$R = \frac{\sum_{i=1}^{n} f_i}{\sum_{i=1}^{n} S_i} \times 100$$

where:

R = The perchloroethylene content of the wet waste, expressed in kg per

100 kg (lb per 200 lb) wet waste material;

f_i = Weight of perchloroethylene in the wet waste portion, g;

S_i = Weight of wet waste portion, g; and

n = The total number of analyses.

g. Precision and Accuracy

1. Accuracy. -- Concentrations of audit samples obtained by the analyst shall agree within 10 percent of the actual concentrations. If the 10-percent specification is not met, reanalyze the compliance samples and audit samples, and include initial and reanalysis values in the test report.

2. Precision. -- Duplicate results produced by the same analyst should be considered suspect if they differ by more than 5 percent.

36.6. Recordkeeping. -- Each owner or operator of a perchloroethylene dry cleaning facility subject to this section 36. shall maintain the following records in a readily accessible location for at least three years and shall make these records available to the director upon verbal or written request:

a. A record of control equipment maintenance, such as replacement of the carbon in a carbon adsorption unit;

b. A record of the results of visual leak inspections conducted in accordance with section 36.4.; and

c. The results of all tests conducted in accordance with the requirements described in sections 36.4.c. and 36.4.d.

36.7. Reporting requirements. -- The owner or operator of any facility containing sources subject to this section 36. shall:

a. Comply with the initial compliance certification requirements of section 5.1.; and

b. Comply with the requirements of section 5.2. for excess emissions related to the control devices required to comply with section 36.3.

§45-21-37. Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment.

37.1. Applicability.

a. This section 37. applies to all equipment in volatile organic compound (VOC) service in any process unit at a synthetic organic chemical, polymer, and resin manufacturing facility.

1. A piece of equipment is not in VOC service if the VOC content of the process fluid can never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

A. Procedures that conform to the general methods in ASTM E260, E168, and E169 shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment;

B. Organic compounds that are considered by the U.S. EPA to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid; and

C. Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in VOC service. If the commission disagrees with the judgment, sections ~~37.8.b.1. and 37.8.b.2.~~ 37.1.a.1.A. and 37.1.a.1.B. shall be used to resolve the disagreement.

b. This section 37. does not apply to any synthetic organic chemical, polymer, or resin manufacturing ~~facility~~ process unit whose annual design production capacity is less than 1,000 megagrams (Mg) (1,100 tons) of product.

c. The requirements of section 37.3. do not apply to:

1. Any equipment in vacuum service;

2. Any pressure-relief valve that is connected to an operating flare header or vapor recovery device;

3. Any liquid pump that has a dual mechanical pump seal with a barrier fluid system; ~~or~~

4. Any compressor with a degassing vent that is routed to an operating VOC control device; or

5. Pumps and valves in heavy liquid service except that if evidence of a leak is found by visual, audible, olfactory, or other detection method, the owner or operator must confirm the presence of a leak using methods specified in section 46. If a leak is confirmed, the owner or operator must repair the leak as specified in section 37.7.

37.2. Definitions. -- As used in this section 37, all terms not defined herein shall have the meaning given them in section 2.

a. "[In] gas/vapor service" means that the piece of equipment in VOC service contains process fluid that is in the gaseous state at operating conditions.

b. "[In] heavy liquid service" means that the piece of equipment in VOC service is not in gas/vapor service or in light liquid service.

c. "[In] light liquid service" means that the piece of equipment in VOC service contains a liquid that meets the following conditions: (1) the vapor pressure of one or more of the components is greater than 0.3 kPa (0.044 in Hg) at 20°C (68°F) (standard reference texts or ASTM D2879 shall be used to determine the vapor pressures); (2) the total concentration of the pure components having a vapor pressure greater than 0.3 kPa (0.044 in. Hg) at 20°C (68°F) is equal to or greater than 20 percent by weight; and (3) the fluid is a liquid at operating conditions.

d. "Process unit" means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in 40 CFR 60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for product.

e. "[In] vacuum service" means that the equipment in VOC service is operating at an internal pressure which is at least 5 kPa below ambient pressure.

f. "[In] VOC service" means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. The provisions of ~~paragraph (a)(i)(ii) of this~~ section 37.1.a.1. specify how to determine that a piece of equipment is not in VOC service.

37.3. Standards: General. -- The owner or operator of a synthetic organic chemical, polymer, or resin manufacturing facility subject to this section 37. shall ensure that:

a. Any open-ended line or valve is sealed with a second valve, blind flange, cap, or plug except during operations requiring process fluid flow through the open-ended line or valve;

b. When a second valve is used, each open-ended line or valve equipped with a second valve is operated in such a manner that the valve on the process fluid end is closed before the second valve is closed; and

c. When a double block-and-bleed system is used, the bleed valve or line is open only during operations that require venting of the line between the block valves and is closed at all other times.

37.4. Standards: Equipment inspection program. -- The owner or operator of a synthetic organic chemical, polymer, or resin manufacturing facility shall conduct the equipment inspection program described in sections 37.3.a. through 37.3.c. using the test methods specified in section 46.

a. The owner or operator of a synthetic organic chemical, polymer, or resin manufacturing facility shall conduct quarterly monitoring of each:

1. Compressor;

2. Pump in light liquid service;

3. Valve in light liquid service, except as provided in sections 37.5. and 37.6.;

4. Valve in gas/vapor service, except as provided in sections 37.5. and 37.6.; and

5. Pressure relief valve in gas/vapor service, except as provided in sections 37.5. and 37.6.

b. The owner or operator of a synthetic organic chemical or resin manufacturing facility shall conduct a weekly visual inspection of each pump in light liquid service.

c. The owner or operator of a synthetic organic chemical, polymer, or resin manufacturing facility shall monitor each pressure relief valve after each overpressure relief to ensure that the valve has properly reseated and is not leaking.

d. It shall be determined that a leak has been detected when:

1. When an instrument reading of 10,000 parts per million (ppm) or greater is measured; or

2. If there are indications of liquid dripping from the equipment.

e. When a leak is detected, the owner or operator shall affix a weatherproof, readily visible tag in a bright color such as red or yellow, bearing the equipment identification number and the date on which the leak was detected. This tag shall remain in place until the leaking equipment is repaired. An alternative leak identifier system may be used if the owner or operator demonstrates to the director that the alternative system is equally as effective. The requirements of this section 37.4.e. apply to any leak detected by the equipment inspection program and to any leak from any equipment that is detected on the basis of sight, sound, or smell.

37.5. Standards: Alternative standards for valves--skip period leak detection and repair.

a. An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service as described in section 37.4.

b. If the percent of valves leaking is equal or less than 2.0 for two consecutive quarters, an owner or operator may skip alternate quarterly leak detection periods for the valves in gas/vapor and light liquid service.

c. If the percent of valves leaking is equal to or less than 2.0 for five consecutive quarters, an owner or operator may skip three of the quarterly leak detection periods per year for the valves in gas/vapor and light liquid service, provided that each valve shall be monitored once each year.

d. If at any time the percent of valves leaking is greater than 2.0, the owner or operator shall resume compliance with the requirements in section 37.4. but may again elect to comply with the alternative standards in section 37.5.

e. The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and previously leaking valves for which repair has been delayed by the total number of valves subject to the requirements of this section 37.

f. An owner or operator shall keep a record of the percent of valves found leaking during each leak detection period.

37.6. Standards: Alternative standards for unsafe-to-monitor valves and difficult-to-monitor valves.

a. Any valve is exempt from the requirements of section 37.4. as an unsafe-to-monitor valve if:

1. The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with section 37.4.; and

2. The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

b. Any valve is exempt from the requirements of section 37.4. as a difficult-to-monitor valve if:

1. The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters (m) (6.6 feet [ft]) above a support surface; and

2. The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

c. The alternative standards of section 37.5. are not available to valves subject to the requirements of section 37.6.

37.7. Standards: Equipment repair program. -- The owner or operator of a synthetic organic chemical, polymer, or resin manufacturing facility refinery shall:

a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and

b. Repair any leak as soon as practicable, but not later than 15 calendar days after it is detected except as provided in section 37.8.

37.8. Standards: Delay of repair.

a. Delay of repair of equipment for which a leak has been detected will be allowed if repair is technically infeasible without a process unit shutdown. Repair of such equipment shall occur before the end of the first process unit shutdown after detection of the leak.

b. Delay of repair of equipment will also be allowed for equipment that is isolated from the process and that does not remain in VOC service after detection of the leak.

c. Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, and if valve assembly supplies have been depleted, where valve assembly

supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the first process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

37.9. Test methods and procedures.

a. In conducting the monitoring required to comply with section 37.4., the owner or operator shall use the test methods specified in section 46.

b. The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all of the following conditions apply:

1. The vapor pressure of one or more of the components is greater than 0.3 kiloPascal (kPa) (0.044 inches of Mercury [in Hg]) at 20°C (68°F). Standard reference texts or ASTM D2879 shall be used to determine the vapor pressures;

2. The total concentration of the pure components having a vapor pressure greater than 0.3 kPa (0.044 in Hg) at 20°C (68°F) is equal to or greater than 20 percent by weight; and

3. The fluid is a liquid at operating conditions;

c. Samples used in conjunction with section 37.9.b. shall be representative of the process fluid that is contained in or contacts the equipment.

37.10. Recordkeeping requirements.

a. Each owner or operator subject to the provisions of this section 37. shall comply with the recordkeeping requirements of this section 37.

b. An owner or operator of more than one facility subject to the provisions of this section 37. may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

c. When each leak is detected as specified in section 37.4., the following information shall be recorded in a log and shall be kept for 3 years in a readily accessible location:

1. The instrument and operator identification numbers and the equipment identification number;

2. The date the leak was detected and the dates of each attempt

to repair the leak;

3. The repair methods employed in each attempt to repair the leak;

4. The notation "Above 10,000" if the maximum instrument reading measured by the methods specified in section 46. after each repair attempt is equal to or greater than 10,000 ppm;

5. The notation "Repair Delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak;

6. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process unit shutdown;

7. The expected date of successful repair of the leak if a leak is not repaired within 15 days;

8. The dates of process unit shutdowns that occur while the equipment is unrepaired; and

9. The date of successful repair of the leak.

d. A list of identification numbers of equipment in vacuum service shall be recorded in a log that is kept in a readily accessible location.

e. The following information for valves complying with section 37.5. shall be recorded in a log that is kept for 3 years in a readily accessible location:

1. A schedule of monitoring; and

2. The percent of valves found leaking during each monitoring period.

f. The following information pertaining to all valves subject to the requirements of section 37.6. shall be recorded in a log that is kept for 3 years in a readily accessible location:

1. A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve; and

2. A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the

valve is difficult to monitor, and the schedule for monitoring each valve.

g. The following information shall be recorded in a log that is kept for 3 years in a readily accessible location for use in determining exemptions as provided in section 37.1.:

1. An analysis demonstrating the design capacity of the affected facility; and

2. Information and data used to demonstrate that a piece of equipment is not in VOC service.

37.11. Reporting. -- The owner or operator of any facility containing sources subject to this section 37. shall comply with the requirements in sections 5.1. and 5.2.

§45-21-38. Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins.

38.1. Applicability.

a. This section 38. applies to the following process sections at facilities engaged in the manufacture of high-density polyethylene, polypropylene, and polystyrene:

1. For the manufacture of high-density polyethylene using a liquid-phase slurry process: each material recovery section and each product finishing section;

2. For the manufacture of polypropylene using a liquid-phase process: each polymerization reaction section, each material recovery section, and each product finishing section; and

3. For the manufacture of polystyrene using a continuous process: each material recovery section.

b. Facilities having all process sections with uncontrolled emission rates at or below those identified in sections 38.1.b.1. through 38.1.b.6. are exempt from the requirements of this section 38. except that owners or operators seeking to comply with this section 38. by complying with the uncontrolled emission rates in sections 38.1.b.1. through 38.1.b.6. are still required to comply with the initial certification requirements of section 5.1.

	Production Process	Process Section	Uncontrolled Emission Rate, Megagram of product per year (Mg/yr)
1.	High density polyethylene, liquid-phase slurry process.	Material recovery section	7
2.	High density polyethylene, liquid-phase slurry process	product finishing section	19
3.	Polypropylene, liquid-phase process	polymerization reaction section	7
4.	Polypropylene, liquid-phase process	Material recovery section	8
5.	Polypropylene, liquid-phase process	product finishing section	36
6.	Polystyrene, continuous process	Material recovery section	7

c. ~~Any facility that becomes subject to the provisions of this~~

~~section 38. by exceeding the applicability thresholds in section 38.1.b. shall remain subject to these provisions even if its emissions later fall below the applicability thresholds.~~

38.2. Definitions. -- As used in this section 38., all terms not defined herein shall have the meaning given them in section 2.

a. "Continuous process" means a polymerization process in which reactants are introduced in a continuous manner and products are removed either continuously or intermittently at regular intervals so that the process can be operated and polymers produced essentially continuously.

b. "Flame zone" means that portion of the combustion chamber in a boiler occupied by the flame envelope.

c. "High-density polyethylene" means a linear, thermoplastic polymer comprised of at least 50 percent ethylene by weight and having a density greater than 0.94 grams per cubic centimeter (g/cm^3) (59 pounds per cubic foot [lb/ft^3]).

d. "Liquid-phase process" means a polymerization process in which the polymerization reaction is carried out in the liquid phase; i.e., the monomer(s) and any catalyst are dissolved or suspended in a liquid solvent.

e. "Liquid-phase slurry process" means a liquid-phase polymerization process in which the monomer(s) are in solution (completely dissolved) in a liquid solvent, but the polymer is in the form of solid particles suspended in the liquid reaction mixture during the polymerization reaction, sometimes called a particle-form process.

f. "Polypropylene" means a polymer comprised of at least 50 percent propylene by weight.

g. "Polystyrene" means a thermoplastic polymer comprised of at least 80 percent styrene or para-methylstyrene by weight.

h. "Process line" means a group of equipment assembled that can operate independently if supplied with sufficient raw materials to produce polypropylene, high-density polyethylene, polystyrene. A process line consists of the equipment in the following process sections (to the extent that these process sections are present at a plant): raw materials preparation, polymerization reaction, product finishing, product storage, and material recovery.

i. "Process section" means the equipment designed to accomplish a general but well-defined task in polymer production. Process sections include raw

materials preparation, polymerization reaction, material recovery, product finishing, and product storage and may be dedicated to a single process line or common to more than one process line.

j. "Product finishing section" means the equipment that treats, shapes, or modifies the polymer or resin to produce the finished end product of the particular facility. Product finishing equipment may accomplish extruding and pelletizing, cooling and drying, blending, additives introduction, curing, or annealing. Product finishing does not include polymerization or shaping such as fiber spinning, molding, or fabricating or modification such as fiber stretching and crimping.

38.3. Standards: High-density polyethylene and polypropylene.

a. The owner or operator of a high-density polyethylene or polypropylene process line containing a process section subject to this section 38. shall comply with the following:

1. Reduce emissions of total volatile organic compounds (VOCs) by 98 weight percent, determined according to the procedure specified in section 38.5.a., or to a VOC concentration of 20 parts per million volumetric (ppmv), as determined by the procedure specified in section 38.5.b., on a dry basis, whichever is less stringent. Total VOC is expressed as the sum of the actual compounds, not carbon equivalents. If an owner or operator elects to comply with the 20 ppmv concentration standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the vent stream. The procedure in section 38.5.c. shall be used to correct the concentration to 3 percent oxygen;

2. Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million British thermal units per hour (Btu/hr) or greater by introducing the vent stream into the flame zone of the boiler or process heater; or

3. Combust the emissions in a flare as follows:

A. Flares shall be designed for and operated with no visible emissions as determined by the method specified in section 38.5.d.1., except for periods not to exceed a total of 5 minutes during any 2 consecutive hours;

B. Flares shall be operated with a flame present at all times, as determined by the method specified in section 38.5.d.2.;

C. Flares used to comply with provisions of this section

38. shall be steam-assisted, air-assisted, or non-assisted;

D. Flares shall be used only with the net heating value of the gas being combusted being 11.2 megaJoules per standard cubic meter (MJ/scm) (300 Btu per standard cubic foot [Btu/scf]) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted shall be determined by the method specified in section 38.5.e.7.

E. Steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity, as determined by the method specified in section 38.5.e.4., less than 18.3 meters per second (m/s) (60 feet per second [ft/s]), except as provided in sections 38.3.a.3.F. and 38.3.a.3.G.;

F. Steam-assisted and non-assisted flares designed for and operated with an exit velocity, as determined by the methods specified in section 38.5.e.4. equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf); and

G. Steam-assisted and non-assisted flares designed for and operated with an exit velocity, as determined by the methods specified in section 38.5.e.4., less than the velocity, V_{max} as determined by the method specified in section 38.5.e.5. and less than 122 m/s (400 ft/s) are allowed; and

H. Air-assisted flares shall be designed and operated with an exit velocity less than the Velocity, V_{max}, as determined by the method specified in section 38.5.e.6.

38.4. Standards: Polystyrene. -- The owner or operator of a polystyrene process line containing process sections subject to this section 38. shall comply with the following:

a. Not allow continuous VOC emissions from the material recovery section to be greater than 0.12 kg (kilograms) VOC per 1,000 kg of product (0.12 pounds [lb] VOC per 1,000 lb of product); or

b. Not allow the outlet gas stream from each final condenser in the material recovery section to exceed -25°C (-13°F).

38.5. Test methods and procedures.

a. The owner or operator shall determine compliance with the percent

emission reduction standard in section 38.3.a.1. as follows:

1. The emission reduction of total VOC shall be determined using the following equation:

$$P = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

where:

P = Percent emission reduction, by weight.

E_{inlet} = Mass rate of total VOC entering the control device, kg VOC/hr.

E_{outlet} = Mass rate of total VOC discharged to the atmosphere, kg VOC/hr

2. The mass rates of total VOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_1 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_1 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o$$

where:

C_{ij}, C_{oj} = Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppmv.

M_{ij}, M_{oj} = Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device respectively, g/gmole (lb/lb-mole).

Q_i, Q_o = Flow rate of the gas stream at the inlet and outlet of the control device, respectively, dscm/hr (dscf/hr).

K_1 = 4.157×10^{-8} [(kg)/(g-mole)]/[(g)(ppm)(dscm)] {5.711×10^{-15} [(lb)(/(lb-mole)]/[(lb)(ppm)(dscf)]}.

3. Method 18 of 40 CFR Part 60, Appendix A shall be used to determine the concentration of each individual organic component (C_{ij}, C_{oj}) in the

gas stream. Method 1 or 1A of 40 CFR Part 60, Appendix A, as appropriate, shall be used to determine the inlet and outlet sampling sites. The inlet site shall be before the inlet of the control device and after all product recovery units.

4. Method 2, 2A, 2C, or 2D of 40 CFR Part 60, Appendix A, as appropriate, shall be used to determine the volumetric flow rates (Q_i, Q_o). If necessary, Method 4 of 40 CFR Part 60, Appendix A shall be used to determine the moisture content. Both determinations shall be compatible with the Method 18 determinations.

5. Inlet and outlet samples shall be taken simultaneously. The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15 minute intervals.

b. The owner or operator shall determine compliance with the emission concentration standard in section 38.3.a.1. as follows:

1. The total VOC concentration is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{VOC} = \sum_{j=1}^{n} C_j$$

where:

C_{VOC} = Concentration of total VOC, dry basis, ppmv;
C_j = Concentration of sample component j, ppm; and
n = Number of components in the sample.

2. Method 18 of 40 CFR Part 60, Appendix A shall be used to determine the concentration of each individual inorganic component (C_j) in the gas stream. Method 1 or 1A of 40 CFR Part 60, Appendix A, as appropriate, shall be used to determine the sampling site at the outlet of the control device. Method 4 of 40 CFR Part 60, Appendix A shall be used to determine the moisture content, if necessary.

3. The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15 minute intervals.

c. Supplemental combustion.

1. If supplemental combustion air is used, the total VOC

concentration shall be corrected to 3 percent oxygen and shall be computed using the following equation:

$$C_{CORR} = C_{MEAS}\left(\frac{17.9}{20.9 - \%O_{2d}}\right)$$

where:

C_{CORR} = Concentration of total VOC corrected to 3 percent oxygen, dry basis, ppmv;

C_{MEAS} = Concentration of total VOC, dry basis, ppmv, as calculated in section 38.5.b.1. above; and

$\%O_{2d}$ = Concentration of O_2, dry basis, percent by volume.

2. The emission rate correction factor, integrated sampling and analysis procedure of Method 3 of 40 CFR Part 60, Appendix A shall be used to determine the oxygen concentration ($\%O_{2d}$). The sampling site shall be the same as that of the total VOC sample and the samples shall be taken during the same time that the total VOC samples are taken.

d. When a flare is used to comply with section 38.3.a.3.:

1. Method 22 of 40 CFR Part 60, Appendix A shall be used to determine the compliance of flares with the visible emission requirement in section 38.3.a.3.A. The observation period is 2 hours and shall be used according to Method 22; and

2. The presence of a flare pilot flame shall be monitored using a thermocouple or other equivalent monitoring device to detect the presence of a flame.

e. The test methods in 40 CFR Part 60, Appendix A, shall be used as reference methods for determining the VOC emission rate in terms of kg emission per megagram (Mg) of product, exit velocities, or net heating value of the gas combusted to determine compliance under sections 38.3. and 38.4. as follows:

1. Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the molar composition and vent stream flow rate determination prescribed in sections 38.5.e.2. and 38.5.e.3. shall be prior to the inlet of any combustion device and prior to any dilution of the stream with air;

2. The composition of the process vent stream shall be determined as follows:

A. Method 18 and ASTM D2504-67 (reapproved 1977) to measure the concentration of VOC and the concentration of all other compounds present except water vapor and carbon monoxide; and

B. Method 4 to measure the content of water vapor;

3. The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate;

4. The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Method 2, 2A, 2C, or 2D as appropriate, by the unobstructed (free) cross-sectional area of the flare tip;

5. The maximum permitted velocity, V_{max}, for flares complying with section 38.3.a.3.E. shall be determined using the following equation:

$$Log_{10}\ (V_{max}) = \frac{H_T + 28.8}{31.7}$$

where:

V_{max}	=	Maximum permitted velocity, m/s;
28.8	=	Constant;
31.7	=	Constant; and
H_T	=	The net heating value as determined in section 38.5.e.7.

6. The V_{max} for air-assisted flares shall be determined by the following equation:

$$V_{max} = 8.706 + 0.7084\ (H_T)$$

where:

V_{max}	=	maximum permitted velocity, m/s;
8.706	=	constant;
0.7084	=	constant; and
H_T	=	The net heating value as determined in section 38.5.e.7.

7. The net heating value of the process vent stream being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T = Net heating value of the sample, MJ/scm, where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 millimeters of Mercury (mm Hg) (77°F and 29.92 inches of Mercury [in Hg]), but the standard temperature for determining the volume corresponding to one mole is 20°C (68°F);

K = Constant: $K = 1.740 \times 10^{-7} \frac{(1)}{ppm} \frac{(g\ mole)}{scm} \frac{(MJ)}{kcal}$

where standard temperature for $\frac{(g\ mole)}{scm}$ is 20°C

C_i = Concentration of sample components i in ppm on a wet basis, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-82; and

H_i = Net heat of combustion of sample component i, kcal/g-mole at 25°C (77°F) and 760 mm Hg (29.92 in Hg). The heats of combustion of process vent stream components may be determined using ASTM D2382-76 (reapproved 1977) if published values are not available or cannot be calculated;

8. The emission rate of VOC in the process vent stream shall be calculated using the following equation:

$$E_{VOC} = K \left(\sum_{i=1}^{n} C_i M_i \right) Q_s$$

where:

E_{VOC} = Emission rate of total organic compounds in the sample, kilogram per hour (kg/h);

K = Constant, 2.494×10^{-6} (1/ppm)(g-mole/scm)(kg/g)(min/h), where standard temperature for (g-mole/scm) is 20°C (68°F);

C_i = Concentration of sample component i, ppm;

M_i = Molecular weight of sample component i, g/g-mole; and

Q_s = Vent stream flow rate (scm/min), at a standard temperature of 20°C (68°F);

9. The rate of polymer produced, P_p (kg/h), shall be determined by dividing the weight of polymer pulled in kg from the process line during the performance test by the number of hours (h) taken to perform the performance test. The polymer pulled, in kg, shall be determined by direct measurement or, subject to prior approval by the commission and the U.S. EPA, computed from materials balance by good engineering practice; and

10. The emission rate of VOC in terms of kilograms of emissions per megagram of production shall be calculated using the following equation:

$$ER_{VOC} = \frac{VOC}{P_p \times \frac{1Mg}{1{,}000kg}}$$

where:

ER_{VOC} = Emission rate of VOC, kg VOC/Mg product;
E_{VOC} = Emission rate of VOC in the sample, kg/h; and
P_p = The rate of polymer produced, kg/h.

38.6. Recordkeeping. -- The owner or operator of a facility subject to this section 38. shall maintain the following records in a readily accessible location for at least 3 years and shall make these records available to the director upon verbal or written request:

a. For facilities complying with the standards listed in section 38.3.a.1., parameters listed in sections 38.5.a., 38.5.b., and, where applicable, section 38.5.e.;

b. For facilities complying with the standards listed in section 38.3.a.2., parameters listed in sections 38.5.c. and, where applicable, 38.5.e.;

c. For facilities complying with the standards listed in section 38.3.a.3., parameters listed in sections 38.5.d. and, where applicable, section 38..5.e.;

d. For facilities complying with the standards listed in section 38.4., parameters listed in section 38.5.e. where applicable; and

e. For all facilities containing sources subject to this section 38., the following records shall be kept:

1. The time, date, and duration of any excess emissions;

2. The subject source of any excess emissions;

3. The cause of any excess emissions;

4. The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of any excess emissions; and

5. Any corrective actions and schedules utilized to correct the conditions causing any excess emissions.

38.7. Reporting requirements. -- The owner or operator of any facility containing sources subject to this section 38. shall:

a. Comply with the initial compliance certification requirements of section 5.1.; and

b. Comply with the requirements of section 5.2. for excess emissions related to the control devices required to comply with section 38.3.a.2., section 38.3.a.3., or section 38.4.b.

§45-21-39. Air Oxidation Processes in the Synthetic Organic Chemical Manufacturing Industry.

39.1. Applicability.

a. This section 39. applies to the following air oxidation facilities in the synthetic organic chemical manufacturing industry:

1. Each air oxidation reactor not discharging its vent stream into a recovery system;

2. Each combination of an air oxidation reactor and the recovery system into which its vent stream is discharged; and

3. Each combination of two or more air oxidation reactors and the common recovery system into which their vent streams are discharged.

b. Any air oxidation reactor vent stream that has a total resource effectiveness (TRE) index value greater than 1.0 is exempt from all provisions of this section 39. except the requirements in sections 39.3., 39.5.b., and 39.6.j.

39.2. Definitions. -- As used in this section 39., all terms not defined herein shall have the meaning given them in section 2.

a. "Air oxidation facility" means a product recovery system and all associated air oxidation process reactors discharging directly into that system or any such reactors discharging directly into the atmosphere.

b. "Air oxidation process" means a reactor in which air is used as an oxidizing agent to produce an organic chemical.

c. "Air oxidation reactor" means any device or process vessel in which one or more organic reactants are combined with air or a combination of air and oxygen to produce one or more organic compounds. Ammoxidation and oxychlorination are included in this definition.

d. "Air oxidation reactor recovery train" means an individual recovery system receiving the vent stream from at least one air oxidation reactor, along with all air oxidation reactors feeding vent streams into this system.

e. "Product recovery system" means any equipment used to collect volatile organic compound (VOC) for use, reuse, or sale. Such equipment includes, but is not limited to, absorbers, adsorbers, condensers, and devices that recover non-VOCs such as ammonia and HCl.

f. "Synthetic organic chemical manufacturing industry" means the industry that produces, as intermediates or final products, one or more of the chemicals listed at 40 CFR 60.489.

g. "Total resource effectiveness index value," or TRE index value, means a measure of the supplemental total resource requirement per unit of VOC emission reduction associated with an individual air oxidation vent stream, based on vent stream flow rate, emission rate of VOC, net heating value, and corrosive properties, as quantified by the equation given under section 39.5.a.

h. "Vent stream" means any gas stream containing nitrogen that was introduced as air to the air oxidation reactor, released to the atmosphere directly from any air oxidation reactor recovery train or indirectly, after diversion through other process equipment.

39.3. Standards. -- For each vent stream from an air oxidation reactor or combination air oxidation reactor and recovery train subject to this section 39., the owner or operator shall comply with section 39.3.a., section 39.3.b., or section 39.3.c.

a. Reduce total VOC emissions by 98 weight percent or to 20 parts per million volumetric (ppmv) on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this section 39.3.a., the vent stream shall be introduced into the flame zone of the boiler or process heater;

b. Combust the emissions in a flare that meets the requirements of 40 CFR 60.18; or

c. Maintain a TRE index value greater than 1.0 without the use of VOC emission control devices.

39.4. Monitoring requirements.

a. The owner or operator of an air oxidation facility that uses an incinerator to seek to comply with the VOC emission limit specified under section 39.3.a., shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

1. A temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

A. Where an incinerator other than a catalytic incinerator

is used, a temperature monitoring device shall be installed in the firebox.

B. Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

2. A flow indicator that provides a record of vent stream flow to the incinerator at least once every hour for each air oxidation facility. The flow indicator shall be installed in the vent stream from each air oxidation facility at a point closest to the inlet of each incinerator and before being joined with any other vent stream.

b. The owner or operator of an air oxidation facility that uses a flare to seek to comply with section 39.3.b. shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

1. A heat sensing device, such as an ultra-violet sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

2. A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each air oxidation facility. The flow indicator shall be installed in the vent stream from each air oxidation facility at a point closest to the flare and before being joined with any other vent stream.

c. The owner or operator of an air oxidation facility that uses a boiler or process heater to seek to comply with section 39.3.a. shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

1. A flow indicator that provides a record of vent stream flow to the boiler or process heater at least once every hour for each air oxidation facility. The flow indicator shall be installed in the vent stream from each air oxidation reactor within a facility at a point closest to the inlet of each boiler or process heater and before being joined with any other vent stream.

2. A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) heat input design capacity.

3. Monitor and record the periods of operation of the boiler or process heater if the design input capacity of the boiler or process heater is 44 MW (150 million Btu/hr) or greater. The records shall be readily available for inspection.

d. The owner or operator of an air oxidation facility that seeks to demonstrate compliance with the TRE index value limit specified under section 34.3.c. shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

1. Where an absorber is the final recovery device in a recovery system:

A. A scrubbing liquid temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored, expressed in degrees Celsius or ±0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of ±0.02 specific gravity unit, each equipped with a continuous recorder; and

B. An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infrared, photoionization, or thermal conductivity, each equipped with a continuous recorder.

2. Where a condenser is the final recovery device in a recovery system:

A. A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater; and

B. An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infrared, photoionization, or thermal conductivity, each equipped with a continuous recorder.

3. Where a carbon adsorber is the final recovery device in a recovery system:

A. An integrating steam flow monitoring device having an accuracy of ±10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, both equipped with a continuous recorder; and

B. An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infrared, photoionization, or thermal conductivity, each equipped with a continuous recorder.

39.5. Test methods and procedures. -- The following methods shall be used as reference methods to demonstrate compliance with section 39.3.

a. The following equation shall be used to calculate the TRE index for a given vent stream:

$$TRE = \frac{1}{E}\left[a + b\,(FL)^{0.88} + c(FL) + d(FL)H_T + e(FL)^{0.88}(H_T)^{0.88} + f(FL)^{0.5} \right]$$

where:

TRE = the total resource effectiveness index value,

E = the measured hourly emissions in units of kilograms/hour (kg/h).

FL = the vent stream flow rate in scm/min, at a standard temperature of 20°C. For a Category E stream (see Table 1), the factor $f(FL)^{0.5}$ shall be replaced with

$$f\left[(FL)\ \frac{(H_T)^{0.5}}{3.6}\right]$$

H_T = vent stream net heating value in units of MJ/scm, where the net enthalpy per mole of offgas is based on combustion at 25°C (68°F) and 760 millimeters of Mercury (mm Hg), but the standard temperature for determining the volume corresponding to one mole is 20°C, as in the definition of FL.

a, b, c, d, e, and f = specific coefficients for six different general categories of process vent streams. The set of coefficients that apply to a given air oxidation process vent stream are specified in Table 1.

TABLE 1. COEFFICIENTS OF THE TOTAL RESOURCE EFFECTIVENESS (TRE) INDEX EQUATION

A1. FOR CHLORINATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 3.5:						
FL = vent stream flow rate (scm/min)	a	b	c	d	e	f
FL ≤ 13.5	48.73	0	0.404	-0.1632	0	0
13.5 < FL ≤ 700	42.35	0.624	0.404	-0.1632	0	0.0245
700 < FL ≤ 1,400	84.38	0.678	0.404	-0.1632	0	0.0346
1,400 < FL ≤ 2,100	126.41	0.712	0.404	-0.1632	0	0.0424
2,100 < FL ≤ 2,800	168.44	0.747	0.404	-0.1632	0	0.0490
2,800 < FL ≤ 3,500	210.47	0.758	0.404	-0.1632	0	0.0548
A2. FOR CHLORINATED PROCESS VENT STREAMS, IF 3.5 < NET HEATING VALUE (MJ/scm):						
FL = vent stream flow rate (scm/min)	a	b	c	d	e	f
FL ≤ 13.5	47.76	0	-0.292	0	0	0
13.5 < FL ≤ 700	41.58	0.605	-0.292	0	0	0.0245
700 < FL ≤ 1,400	82.84	0.658	-0.292	0	0	0.0346
1,400 < FL ≤ 2,100	123.10	0.691	-0.292	0	0	0.0424
2,100 < FL ≤ 2,800	165.36	0.715	-0.292	0	0	0.0490
2,800 < FL ≤ 3,500	206.62	0.734	-0.292	0	0	0.0548
B. FOR NONCHLORINATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 0.48:						
FL = vent stream flow rate (scm/min)	a	b	c	d	e	f
FL ≤ 13.5	19.05	0	0.113	-0.214	0	0
13.5 < FL ≤ 1,350	16.61	0.239	0.113	-0.214	0	0.0245
1,350 < FL ≤ 2,700	32.91	0.260	0.113	-0.214	0	0.0346
2,700 < FL ≤ 3,500	49.21	0.273	0.113	-0.214	0	0.0424
C. FOR NONCHLORINATED PROCESS VENT STREAMS, IF 0.48 < NET HEARING VALUE (MJ/scm) ≤ 1.9:						
FL = vent stream flow rate (scm/min)	a	b	c	d	e	f
FL ≤ 13.5	19.74	0	0.400	-0.202	0	0
13.5 < FL ≤ 1,350	18.30	0.138	0.400	-0.202	0	0.0245
1,350 < FL ≤ 2,700	36.28	0.150	0.400	-0.202	0	0.0346
2,700 < FL ≤ 4,050	54.26	0.158	0.400	-0.202	0	0.0424
D. FOR NONCHLORINATED PROCESS VENT STREAMS, IF 1.9 < NET HEATING VALUE (MJ/scm) ≤ 3.6:						
FL = vent stream flow rate (scm/min)	a	b	c	d	e	f
FL ≤ 13.5	15.24	0	0.033	0	0	0
13.5 < FL ≤ 1,190	13.63	0.157	0.033	0	0	0.0245
1,190 < FL ≤ 2,380	26.95	0.171	0.033	0	0	0.0346
2,380 < FL ≤ 3,570	40.27	0.179	0.033	0	0	0.0424
E. FOR NONCHLORINATED PROCESS VENT STREAMS, IF 3.6 < NET HEATING VALUE (MJ/scm):						
FL = vent stream flow rate (scm/min)	a	b	c	d	e	f
FL ≤ 13.5	15.24	0	0	0.0090	0	0
13.5 < FL ≤ 1,190	13.63	0	0	0.0090	0.0503	0.0245
1,190 < FL ≤ 2,380	26.95	0	0	0.0090	0.0546	0.0346
2,380 < FL ≤ 3,570	40.27	0	0	0.0090	0.0573	0.0424

b. Each owner or operator of an air oxidation facility seeking to comply with section 39.1.b. or section 39.3.c. shall recalculate the TRE index value for that air oxidation facility whenever process changes are made. Some examples of process changes are changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change to the recovery system.

c. Method 1 or 1A of 40 CFR Part 60, Appendix A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or VOC reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

d. Method 2, 2A, 2C, or 2D of 40 CFR Part 60, Appendix A, as appropriate, for determination of the volumetric flow rates.

e. The emission rate correction factor, integrated sampling and analysis procedure of Method 3 of 40 CFR Part 60, Appendix A shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the VOC samples and the samples shall be taken during the same time that the VOC samples are taken. The VOC concentration corrected to 3 percent O_2 (C_c) shall be computed using the following equation:

$$C_c = C_{VOC} \frac{17.9}{20.9 - \%O_{2_d}}$$

where:

C_c = Concentration of VOC corrected to 3 percent O_2, dry basis, ppm by volume.

C_{VOC} = Concentration of VOC, dry basis, ppm by volume.

$\%O_{2d}$ = Concentration of O_2, dry basis, percent by volume.

f. Method 18 of 40 CFR Part 60, Appendix A to determine concentration of VOC in the control device outlet and the concentration of VOC in the inlet when the reduction efficiency of the control device is to be determined.

1. The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15-minute intervals.

2. The emission reduction (R) of VOC shall be determined using the following equation:

$$R = \frac{E_i - E_0}{E_i} \times 100$$

where:

R = Emission reduction, percent by weight.
E_i = Mass rate of VOC entering the control device, kg VOC/hr.
E_0 = Mass rate of VOC discharged to the atmosphere, kg VOC/hr.

3. The mass rates of VOC (E_1, E_0) shall be computed using the following equations:

$$E_i = K_2 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o$$

where:

C_{ij}, C_{oj} = Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively.
M_{ij}, M_{oj} = Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, g/g-mole (lb/lb-mole).
Q_i, Q_o = Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/hr).
K_2 = Constant, 2.494 x 10^{-6} (1/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20°C.

4. The VOC concentration (C_{VOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{VOC} = \sum_{j=1}^{n} C_j$$

where:

C_{VOC} = Concentration of VOC, dry basis, ppm by volume,
C_j = Concentration of sample components in the sample.

n = Number of components in the sample.

g. When a flare is used to seek to comply with section 39.3.b., the flare shall comply with the requirements of 40 CFR 60.18.

h. The following test methods in Appendix A to 40 CFR Part 60, except as provided under 40 CFR 60.18, shall be used for determining the net heating value of the gas combusted to determine compliance under section 39.3.b., and for determining the process vent stream TRE index value to determine compliance under section 39.3.c.

i. Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in sections 39.5.j. and 39.5.k. shall be, except for the situations outlined in section 39.5.i.1., prior to the inlet of any control device, prior to any post-reactor dilution of the stream with air, and prior to any post-reactor introduction of halogenated compounds into the vent stream. No transverse site selection method is needed for vents smaller than 4 inches in diameter.

1. If any gas stream other than the air oxidation vent stream is normally conducted through the final recovery device:

A. 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 the nonair oxidation stream is introduced.

B. The efficiency of the final recovery device is determined by measuring the VOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any nonair oxidation vent stream and at the outlet of the final recovery device.

C. This efficiency is applied to the VOC concentration measured prior to the final recovery device and prior to the introduction of the nonair oxidation stream to determine the concentration of VOC in the air oxidation stream from the final recovery device. This concentration of VOC is then used to perform the calculations outlined in sections 39.5.l. and 39.5.m.

j. The molar composition of the process vent stream shall be determined as follows:

1. Method 18 to measure the concentration of VOC including those containing halogens.

2. ASTM D1946-77 to measure the concentration of carbon

monoxide and hydrogen.

3. Method 4 to measure the content of water vapor.

k. The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

l. The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \left(\sum_{j=1}^{n} C_j H_j \right)$$

where:

H_T = Net heating value of the sample, MJ/scm, where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C, as in the definition of Q_s (offgas flow rate).

K_1 = Constant, 1.740×10^{-7} $\frac{(1)}{ppm} \frac{(g\text{-}mole)}{scm} \frac{(MJ)}{kcal}$

where standard temperature for $\frac{(g\text{-}mole)}{scm}$ is 20°C.

C_j = Concentration of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 as indicated in section 39.5.j.

H_j = Net heat of combustion of compound j, kcal/g-mole, based on combustion at 25°C and 760 mm Hg. The heats of combustion of vent stream components would be required to be determined using ASTM D2382-76 if published values are not available or cannot be calculated.

m. The emission rate of VOC in the process vent stream shall be calculated using the following equation:

$$E_{VOC} = K_2 \left[\sum_{j=1}^{n} C_j M_j \right] Q_s$$

where:

E_{VOC} = Emission rate of VOC in the sample, kg/hr
K_2 = Constant, 2.494×10^{-6} (1/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20°C.
C_j = Concentration on a dry basis of compound j in ppm as measured by Method 18 as indicated in section 39.5.j.
M_j = Molecular weight of sample j, g/g-mole
Q_s = Vent stream flow rate (scm/min) at a standard temperature of 20°C.

39.6. Recordkeeping. -- The owner or operator of a facility subject to this section 39. shall keep the records specified in this section 39.6. in a readily accessible location for at least 3 years. These records shall be made available to the director ~~immediately~~ upon verbal or written request.

a. Where an owner or operator subject to this section 39. seeks to demonstrate compliance with section 39.3.a. through the use of either a thermal or catalytic incinerator:

1. 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 as the compliance test; and

2. The percent reduction of VOC determined as specified in section 39.3.a. that is achieved by the incinerator, or the concentration of VOC determined as specified in section 39.3.a. at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

b. Where an owner or operator subject to the provisions of this section 39. seeks to demonstrate compliance with section 39.3.a. through the use of a boiler or process heater:

1. A description of the location at which the vent stream is introduced into the boiler or process heater, and

2. The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the compliance testing.

c. Where an owner or operator subject to the provisions of this section 39. seeks to comply with section 39.3.b. through the use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance test, continuous records of the

flare pilot flame monitoring, and records of all periods of operation during which the pilot flame is absent.

d. Where an owner or operator seeks to demonstrate compliance with with section 39.3.c.:

1. Where an absorber is the final recovery device in a recovery system, the exit specific gravity and average exit temperature of the absorbing liquid, measured at least every 15 minutes and averaged over the same time period of the compliance testing (both measured while the vent stream is normally routed and constituted); or

2. Where a condenser is the final recovery device in a recovery system, the average exit (product side) temperature, measured at least every 15 minutes and averaged over the same time period of the compliance testing while the vent stream is normally routed and constituted; or

3. Where a carbon adsorber is the final recovery device in a recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the compliance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s), and duration of the carbon bed steaming cycle (all measured while the vent stream is normally routed and constituted); or

4. As an alternative to section 39.6.d.1., section 39.6.d.2., or section 39.6.d.3., the concentration level or reading indicated by the organic monitoring device at the outlet of the absorber, condenser, or carbon adsorber measured at least every 15 minutes and averaged over the same time period of the compliance testing while the vent stream is normally routed and constituted.

5. All measurements and calculations performed to determine the TRE index value of the vent stream.

e. Each owner or operator subject to the provisions of this section 39. shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under sections 39.4.a. and 39.4.c. as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent compliance test are exceeded. The director may at any time require a report of these data. Where a combustion device is used by an owner or operator seeking to demonstrate compliance with section 39.3.a. or section 39.3.c., periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

1. For thermal incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28°C (50°F) below the average combustion temperature during the most recent test at which compliance with section 39.3.a. was determined.

2. For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28°C (50°F) below the average temperature of the vent stream during the most recent test at which compliance with section 39.3.a. was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent test at which compliance with section 39.3.a. was determined.

3. All 3-hour periods of operation during which the average combustion temperature was more than 28°C (50°F) below the average combustion temperature during the most recent test at which compliance with section 39.3.a. was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr).

4. For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under section 39.3.a.

f. Each owner or operator subject to the provisions of this section 39. shall keep up-to-date, readily accessible continuous records of the flow indication specified under sections 39.4.a.2., 39.4.b.2., and 39.4.c.1., as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate.

g. Each owner or operator subject to the provisions of this section 39. who uses a boiler or process heater with a design heat input capacity of 44 MW or greater to comply with section 39.3.a. shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State or Federal regulatory requirements.)

h. Each owner or operator subject to the provisions of this section 39. shall keep up-to-date, readily accessible, continuous records of the flare pilot flame monitoring specified in section 39.4.b. as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

i. Each owner or operator subject to the provisions of this section 39. shall keep up-to-date, readily accessible, continuous records of the equipment

operating parameters specified to be monitored under section 39.4.c. as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent compliance test are exceeded. The director may at any time require a report of these data. Where the owner or operator seeks to demonstrate compliance with section 39.3.c., periods of operation during which the parameter boundaries established during the most recent compliance tests are exceeded are defined as follows:

1. Where an absorber is the final recovery device in a recovery system, and where an organic monitoring device is not used:

A. All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11°C (20°F) above the average absorbing liquid temperature during the most recent compliance test; or

B. All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent compliance test.

2. Where a condenser is the final recovery device in a recovery system, and where an organic monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6°C (11°F) above the average exit (product side) operating temperature during the most recent compliance test.

3. Where a carbon adsorber is the final recovery device in a recovery system and where an organic monitoring device is not used:

A. All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent compliance test; or

B. All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration [and after completion of any cooling cycle(s)] was more than 10 percent greater than the carbon bed temperature (in degrees Celsius) during the most recent compliance test.

4. Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and an organic monitoring device approved by the commission is used, all 3-hour periods of operation during which the average concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent compliance test.

j. Each owner or operator subject to the provisions of this section 39. and seeking to demonstrate compliance with section 39.3.c. shall keep up-to-date, readily accessible records of:

1. Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal, or addition of recovery equipment or air oxidation reactors;

2. Any recalculation of the TRE index value performed pursuant to section 39.5.b; and

3. The results of any test performed pursuant to the methods and procedures required by section 39.4.d.

39.7. Reporting requirements. -- The owner or operator of any facility containing sources subject to this section 39. shall:

a. Comply with the initial compliance certification requirements of section 5.1.; and

b. Comply with the requirements of section 5.2. for excess emissions related to the control devices required to comply with this section.

§45-21-40. Other Facilities that Emit Volatile Organic Compound (VOC).

40.1. Applicability.

a. This section 40. applies to any facility that ~~emits~~ has maximum theoretical emissions of 90.7 megagrams (mg) (100 tons) of volatile organic compound (VOC) or more per calendar year in absence of control devices and is not subject to regulation under sections 10. through 39. In addition, a source or sources within a facility ~~is~~ are subject to this section 40. if ~~it has a~~ the source or sources are not regulated ~~by the~~ under sections 10. through 39. ~~listed above~~ or are not regulated as specified in section 40.1.e., provided that such source or sources, along with any source or sources at the same facility which are regulated under sections 10. through 39. but which fall below the aplicability thresholds of those sections and thus are not subject to the control requirements of those sections, as a group have maximum theoretical emissions of 90.7 megagrams (Mg) (100 tons) or more per calendar year of VOC in the absence of control devices.

b. The owner or operator of a coating line or operation whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 40.4.a.

c. The owner or operator of a non-coating source whose emissions are below this applicability threshold shall comply with the certification, recordkeeping, and reporting requirements of section 40.4.b.

~~d. Any facility that becomes subject to the provisions of this section 40. by exceeding the applicability threshold in section 40.1.a. shall remain subject to these provisions even if its throughput or emissions later fall below the applicability threshold.~~

e. The ~~control~~ requirements in this section 40. shall not apply to coke ovens (including by-product recovery plants), fuel combustion sources, barge loading facilities, jet engine test cells, vegetable oil processing facilities, wastewater treatment facilities, ~~and~~ iron and steel production, surface impoundments, pits, and boilers, industrial furnaces, and incinerators with destruction efficiency of 95 percent or greater.

40.2. Standards. -- The owner or operator of ~~any source at~~ a facility subject to this section 40. shall:

a. Install and operate emission capture and control techniques, or use of complying coatings that achieve an overall reduction ~~in~~ from uncontrolled VOC emissions, as determined by 1990 base year emissions, of at least 81 weight percent;

b. For any coating line, limit the daily-weighted average VOC content to 0.40 kilograms VOC per liter (kg VOC/L) (3.5 pounds VOC per gallon [lb VOC/gal]) or less of coating, as applied, (minus water and exempt compounds) as calculated in section 43.; or

c. Comply with an alternative control plan that has been approved by the commission and the U.S. EPA.

40.3. Test methods and procedures. -- The owner or operator of any source subject to this section 40. shall demonstrate compliance with section 40.2. by using the applicable test methods specified in sections 41. through 46.

40.4. Reporting and Recordkeeping Requirements for Exempt Non-Control Technique Guideline (CTG) Sources.

a. An owner or operator of a coating line or operation that is exempt from the emission limitations in section 40.2. shall comply with the certification, recordkeeping, and reporting requirements in section 4.2.

b. An owner or operator of a non-coating source that is exempt from the emission limitations in section 40.2. shall submit, upon request by the director, records that document that the source is exempt from these requirements.

1. These records shall be submitted to the director within 30 days from the date of request.

2. If such records are not made available, the source will be considered subject to the limits in section 40.2.

40.5. Reporting and Recordkeeping Requirements for Subject Non-CTG Coating Sources.

a. An owner or operator of a coating line or operation subject to this section 40. and complying with section 40.2.a. by the use of complying coatings shall comply with the certification, recordkeeping, and reporting requirements in section 4.3.

b. An owner or operator of a coating line or operation subject to this section 40. and complying with section 40.2.b. by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in section 4.4.

c. An owner or operator of a coating line or operation subject to this section 40. and complying with section 40.2.a. or section 40.2.c. by the use of

control devices shall comply with the testing, reporting, and recordkeeping requirements in section 4.5.

40.6. Reporting and Recordkeeping Requirements for Subject Non-CTG, Non-Coating Sources.

a. The owner or operator of the subject VOC sources shall perform all testing and maintain the results of all tests and calculations required under sections 40.2. and 40.3. to demonstrate that the subject source is in compliance.

b. This owner or operator of the subject VOC source shall maintain these records in a readily accessible location for a minimum of 3 years, and shall make these records available to the director ~~immediately~~ upon verbal or written request.

c. The owner or operator of any facility containing sources subject to this section 40. shall comply with the requirements in section 5.

§45-21-41. Test Methods and Compliance Procedures: General Provisions.

41.1. Test methods. -- The owner or operator of any volatile organic compound (VOC) source required to comply with section 10.3.a. or sections 11. through 40. shall, at the owner's or operator's expense, demonstrate compliance by using the methods of sections 41. through 47. or alternative methods that are approved by the commission and the U.S. EPA and shall meet all the requirements of this section 41.

41.2. Preparation of test plan and quality assurance program. -- At least 30 days before the initiation of a required test under section 44., the owner or operator shall submit a test plan that shall be approved by the director before the results of the test will be considered acceptable. This test plan shall include the following minimum information:

a. The purpose of the proposed test and the applicable section of sections 10. through 40. of this regulation;

b. A detailed description of the facility to be tested, including a line diagram of the facility, locations of test sites, and facility operation conditions for the test;

c. A detailed description of the test methods and procedures, equipment, and sampling sites, i.e., a test plan;

d. A time table for the following:

1. Date for the compliance test;

2. Date of submittal of preliminary results to the director (not later than ~~15~~ 30 days after sample collection); and

3. Date of submittal of final test report (not later than ~~30~~ 60 days after completion of on-site sampling); and

e. Proposed corrective actions should the test results show noncompliance.

f. Internal QA program. -- The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of test data precision. An example of internal QA is the sampling and analysis of replicable samples.

g. External QA program.

1. The external QA program shall include, at a minimum, application of plans for a test method performance audit (PA) during the performance test.

2. The external QA program may also include systems audits, which include the opportunity for on-site evaluation by the director of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.

3. The PA's shall consist of blind audit samples provided by the director and analyzed during the performance test to provide a measure of test data bias.

A. The director shall require the owner or operator to analyze PA samples during each performance test when audit samples are available.

B. Information concerning the availability of audit materials for a specific performance test may be obtained by contacting the Emission Measurement Technical Information Center at (919) 541-2237.

C. If the director has prior knowledge that an audit material is available, he or she may contact the Atmospheric Research and Exposure Assessment Laboratory directly at (919) 541-4531.

D. All other audit materials may be obtained by calling (919) 541-7834.

E. The evaluation criteria applied to the interpretation of the PA results and the subsequent remedial actions required of the owner or operator are the sole responsibility of the director.

41.3. Process operation. -- The owner or operator shall be responsible for providing:

a. Sampling ports, pipes, lines, or appurtenances for the collection of samples and data required by the test methods and procedures;

b. Safe access to the sample and data collection locations; and

c. Light, electricity, and the utilities required for sample and data collection.

41.4. Summary of results. -- No later than 30 days after the sample collection, the owner or operator shall submit preliminary results to the director.

41.5. Final report. -- No later than ~~45~~ 60 days after completion of the on-site sampling, the owner or operator shall submit a test report to the director. The test report shall include the following minimum information:

a. Process description;

b. Air pollution capture system and control device description;

c. Process conditions during testing;

d. Test results and example calculations;

e. Description of sampling locations and test methods;

f. Quality assurance measures; and

g. Field and analytical data.

§45-21-42. Test Methods and Compliance Procedures: Determining the Volatile Organic Compound (VOC) Content of Coatings and Inks.

42.1. Sampling procedures shall follow the guidelines presented in:

a. ASTM D3925: Standard practice for sampling liquid paints and related pigment coatings; or

b. ASTM E300: Standard practice for sampling industrial chemicals.

42.2. The analytical methods specified below shall be used to determine the VOC content of each coating, as applied:

a. Method 24 of 40 CFR Part 60, Appendix A, shall be used in the determination of total volatile content, water content, and density of coatings. For the determination of total volatile content, all samples shall be oven-dried at 100°C for 1 hour.

b. To determine the total volatile content, water content, and density of multi-component coatings, the following procedures shall be used in addition to Method 24 of 40 CFR Part 60, Appendix A:

1. The components shall be mixed in a storage container in proportions the same as those in the coating, as applied. The mixing shall be accomplished by weighing the components in the proper proportion into a container which is closed between additions and during mixing. Approximately 100 ml of coating shall be prepared in a container just large enough to hold the mixture prior to withdrawing a sample.

2. For determination of volatile content, a sample shall be withdrawn from the mixed coating, and then transferred to a dish where the sample shall stand for at least 1 hour, but no more than 24 hours prior to being oven dried at 110°C for 1 hour.

3. For determination of the water content and density of multicomponent coatings, samples shall be taken from the same 100-ml mixture of coating and shall be analyzed by the appropriate ASTM method referenced in Method 24 of 40 CFR Part 60, Appendix A.

c. Method 24A of 40 CFR Part 60, Appendix A, shall be used in the determination of total volatile content, water content, and density of any publication rotogravure printing ink and related coatings.

d. The following ASTM method may be used as an additional procedure

related to determining VOC: ASTM D4457-85 - Standard test method for determination of dichloromethane and 1,1,1, trichloroethane in paints and coatings by direct injection into a gas chromatograph (the procedure delineated above may be used to develop protocols for any compounds specifically exempted from the definition of VOC).

42.3. Use of adaptations to test methods. -- Use of an adaptation to any of the analytical methods specified in section 42.2. may be approved by the director and the U.S. EPA on a case-by case basis. An owner or operator shall submit sufficient documentation for the director and the U.S. EPA to find that the analytical methods specified in sections 42.2.a., 42.2.b., and 42.2.c. will yield inaccurate results and that the proposed adaptation is appropriate.

42.4. Each sample collected for analysis shall meet the following criteria:

a. Each sample shall be at least 1 pint taken into a 1-pint container at a location and time such that the sample will be representative of the coating or ink, as applied (i.e., the sample shall include any dilution solvent or VOC added during the manufacturing process);

b. If a sample larger than 1 pint is obtained, the sample container shall be of a size such that the sample completely fills the container;

c. The container shall be tightly sealed immediately after the sample is taken;

d. Any solvent or other VOC added after the sample is taken shall be measured and accounted for in the calculations in section 42.3.; and

e. For multiple-component coatings, separate samples of each component shall be obtained.

42.5. Calculations for determining the VOC content of coatings and inks from data as determined by Method 24 or 24A of 40 CFR Part 60, Appendix A, shall follow the guidance provided in the following documents:

a. "A Guideline for Surface Coating Calculations", EPA-340/1-86-016; and

b. "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink and Other Coatings", (Revised June 1986) EPA-450/3-84-019.

§45-21-43. Test Methods and Compliance Procedures: Alternative Compliance Methods for Surface Coating.

43.1. Daily-weighted average. -- The daily-weighted average VOC content, in units of mass of VOC per unit volume of coating, minus water and exempt compounds, as applied, of the coatings used on a day on a coating line or operation shall be calculated using the following equation:

$$VOC_w = \frac{\sum_{i=1}^{n} V_i \, C_i}{V_T}$$

where:

VOC_w = The daily-weighted average VOC content of the coatings, as applied, used on a coating line or operation in units of kilograms of VOC per liter of coating (kg VOC/L) (pounds of VOC per gallon of coating [lb VOC/gal]), minus water and exempt compounds;

n = The number of different coatings, as applied, each day on a coating line or operation;

V_i = The volume of each coating, as applied, each day on a coating line or operation in units of L (gal), minus water and exempt compounds; and

C_i = The VOC content of each coating, as applied, each day on a coating line or operation in units of kg VOC/L of coating (lb VOC/gal), minus water and exempt compounds; and

V_T = The total volume of all coating, as applied, each day on a coating line or operation in units of L (gal), minus water and exempt compounds.

43.2. Overall emission reduction efficiency for control systems. -- The overall emission reduction efficiency needed to demonstrate compliance is determined each day as follows:

a. Obtain the emission limitation from the applicable section of this regulation.

b. Calculate the emission limitation on a solids basis according to the following equation:

$$S = \frac{C}{1 - \left(\frac{C}{d} \right)}$$

where:

S = The VOC emission limitation in terms of kg VOC/L of coating solids (lb VOC/gal);

C = The VOC emission limitation in terms of kg VOC/L of coating (lb/gal), minus water and exempt compounds; and

d = The density of VOC for converting emission limitation to a solids basis. The density equals 0.882 kg/L (7.36 lb/gal).

c. Calculate the required overall emission reduction efficiency of the control system for the day according to the following equation:

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

where:

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

VOC_a = (1) The maximum VOC content of the coatings, as applied, used each day on the subject coating line or operation, in units of kg VOC/L of coating solids (lb/gal), as determined by the applicable test methods and procedures specified in section 42.; or (2) The daily-weighted average VOC content, as applied, of the coatings used each day on the subject coating line or operation, in units of kg VOC/L of coating solids (lb/gal), as determined by the applicable test methods and procedures specified in section 42. and the procedure in section 43.2.d.; and

S = VOC emission limitation in terms of kg VOC/L of coating solids (lb VOC/gal).

d. The daily-weighted average VOC content, as applied, of the coatings used on a coating line or operation in units of mass of VOC per unit volume of coating solids shall be calculated by the following equation:

$$VOC_{ws} = \frac{\sum_{i=1}^{n} W_{voc_i} D_i}{\sum_{i=1}^{n} V_i VS_i}$$

where:

VOC_{ws} = The daily-weighted average VOC content, as applied, of the coatings used on a coating line or operation in units of mass of VOC per unit volume of coating solids;

n = The number of different coatings, as applied, used in a day on a coating line or operation;

V_i = The volume of each coating (i), as applied, used in a day on a coating line or operation in units of liters (L) (gallons [gal]);

W_{voc_i} = The weight fraction of VOC in each coating (i), as applied, used in a day on a coating line or operation in units of kg VOC/kg coating (lb/lb);

D_i = The density of each coating (i), as applied, used in a day on a coating line or operation in units of kg coating/L of coating (lb/gal);

VS_i = The volume fraction solids content of each coating (i), as applied, used on a day on a coating line or operation in units of L solids/L coating (gal/gal);

§45-21-44. Test Methods and Compliance Procedures: Emission Capture and Destruction or Removal Efficiency and Monitoring Requirements.

44.1. Determining the efficiency of volatile organic compound (VOC) capture systems.

a. Definitions and abbreviations. -- For purposes of this section 44., the following definitions and abbreviations apply:

1. "Gas/gas method" means either of two methods for determining capture which rely only on gas phase measurements. One method requires construction of a temporary enclosure (TTE) to assure all potential fugitive emissions are measured while the other method uses the room or building which houses the source as an enclosure.

2. "Hood" means a partial enclosure or canopy for capturing and exhausting, by means of a draft, the organic vapors or other fumes rising from a coating process or other source.

3. "Liquid/gas method" means either of two methods for determining capture which require both gas phase and liquid phase measurements and analysis. One liquid/gas method requires construction of a temporary enclosure, the other uses the building or room which houses the facility as an enclosure.

4. "Process line" means any coating line, coating operation, or printing press.

5. "PTE" is a permanent total enclosure, which contains a process that emits VOC and meets the specifications given in Procedure T in Appendix A of this regulation.

6. "TTE" is a temporary total enclosure which is built around a process that emits VOC and meets the specifications given in Procedure T in Appendix A of this regulation.

7. "BE" is a building or room enclosure that contains a process that emits VOC. If a BE is to substitute for a PTE or TTE, the appropriate requirements given in Procedure T in Appendix A of this regulation shall be met.

b. Applicability.

1. The requirements of section 44.1.c. shall apply to all regulated VOC emitting processes employing a control system except as provided below.

2. If a source owner or operator installs a PTE that meets EPA specifications, and which directs all VOC to a control device, the capture efficiency is assumed to be 100 percent, and the source is exempted from the requirements described in section 44.1.c. Procedure T in Appendix A of this regulation shall be used to determine whether a structure is a PTE. This does not exempt a source from performance of any control device efficiency testing required under this regulation. In addition, a source shall demonstrate that all criteria for a PTE are met during the testing for capture efficiency.

3. If a source owner or operator uses a control device designed to collect and recover VOC (e.g. carbon adsorber), an explicit measurement of capture efficiency is not necessary if the conditions given below are met. The overall emission reduction efficiency of the control system can be determined each day by directly comparing the ~~input~~ liquid VOC input to the process (L) to the recovered liquid VOC. The procedure for use in this situation is specified in 40 CFR 60.433 with the following modifications:

A. The source owner or operator shall be able to equate solvent usage with solvent recovery on a 24-hour (daily) basis, rather than a 30-day weighted average as given in 40 CFR 60.433. This shall be done within 72 hours following each 24-hour period; and

B. If the solvent recovery system controls multiple process lines, the source owner or operator shall be able to demonstrate that the overall control (i.e., the total recovered solvent VOC divided by the sum of liquid VOC input to all process lines venting to the control system) meets or exceeds the most stringent standard applicable for any process line venting to the control system.

c. Specific Requirements.

1. The capture efficiency shall be measured using one of the four protocols given in sections 44.1.c.3.A. through 44.1.c.3.D.

2. Any error margin associated with a test protocol shall not be incorporated into the results of a capture efficiency test.

3. Any source required to comply with this section 44. shall use one of the following protocols to measure capture efficiency, unless a suitable alternative protocol is approved by the commission and the U.S. EPA:

A. Gas/gas method using TTE. -- Procedure T in Appendix A of this regulation shall be used to determine whether a temporary enclosure is a TTE. The capture efficiency equation to be used for this protocol is:

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

where:

CE = capture efficiency, decimal fraction

G = mass of VOC captured and delivered to control device using a TTE

F = mass of fugitive VOC that escapes from a TTE.

Procedure G.2 in Appendix A of this regulation is used to obtain G. Procedure F.1 in Appendix A of this regulation is used to obtain F.

B. Liquid/gas method using TTE. -- Procedure T in Appendix A of this regulation shall be used to determine whether a temporary enclosure is a TTE. The capture efficiency equation to be used for this protocol is:

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

where:

CE = capture efficiency, decimal fraction

L = mass of liquid VOC input to process

F = mass of fugitive VOC that escapes from a TTE.

Procedure L in Appendix A of this regulation is used to obtain L. Procedure F.1 in Appendix A of this regulation is used to obtain F.

C. Gas/gas method using the building or room (BE) in which the source is located as the enclosure and in which G and F are measured while operating only the source to be tested. -- All fans and blowers in the building or room shall be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

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

where:

CE = capture efficiency, decimal fraction

G = mass of VOC captured and delivered to a control device

F_B = mass of fugitive VOC that escapes from building enclosure.

Procedure G.2 in Appendix A of this regulation is used to obtain G. Procedure F.2 in Appendix A of this regulation is used to obtain F_B.

D. Liquid/gas method using the building or room (BE) in which the source is located as the enclosure and in which L and F are measured while operating

only the source to be tested. All fans and blowers in the building or room shall be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

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

where:

CE = capture efficiency, decimal fraction

L = mass of liquid VOC input to process

F_B = mass of fugitive VOC that escapes from building enclosure.

Procedure L in Appendix A of this regulation is used to obtain L. Procedure F.2 in Appendix A of this regulation is used to obtain F_B.

d. Recordkeeping and Reporting.

1. All sources complying with this section 44. shall maintain on file a copy of the capture efficiency protocol submitted to the director. All results of appropriate test methods and CE protocols shall be reported to the director within sixty (60) days of the test date. A copy of the results shall be kept on file with the source.

2. If any changes are made to capture or control equipment, the source is required to notify the director within thirty (30) days of these changes and a new capture efficiency and/or control device destruction or removal efficiency test may be required.

44.2. Determining the destruction or removal efficiency of incinerators and carbon adsorbers.

a. Testing.

1. The control device destruction or removal efficiency shall be determined from data obtained by simultaneously measuring the inlet and outlet gas-phase VOC concentrations and gas volumetric flow rates in accordance with the gas-phase test methods specified in section 45. The control device destruction or removal efficiency shall be calculated using the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_i C_i - \sum_{j=1}^{m} Q_j C_j}{\sum_{i=1}^{n} Q_i C_i}$$

where:

E = VOC destruction efficiency of the control device;

Q_i = Volumetric flow rate of the effluent gas flowing through stack i entering the control device, dry standard cubic meters per hour (dscmh);

C_i = Concentration of VOC (as carbon) in the effluent gas flowing through stack i entering the control device, ppmv;

Q_j = Volumetric flow rate of the effluent gas flowing through stack j leaving the control device, dscmh;

C_j = Concentration of VOC (as carbon) in the effluent gas flowing through stack j leaving the control device, ppmv;

n = The number of vents to the control device; and

m = The number of vents after the control device.

2. A source utilizing a PTE (or a BE as a PTE) shall demonstrate that this enclosure meets the requirements given in Procedure T in Appendix A of this regulation for a PTE during any testing of a control device.

3. A source utilizing a TTE (or a BE as a TTE) shall demonstrate that this enclosure meets the requirements given in Procedure T in Appendix A of this regulation for a TTE during testing of a control device. The source shall also provide documentation that the quality assurance criteria for a TTE have been achieved.

b. Monitoring.

1. Any owner or operator who uses an incinerator or regenerative carbon adsorber to comply with any part of this regulation shall install, calibrate, certify to the director, operate, and maintain ~~continuous~~ monitoring equipment. The ~~continuous~~ monitoring equipment shall monitor the following parameters:

A. Continuous monitoring of the combustion chamber temperature of each thermal incinerator or afterburner;

B. Continuous monitoring of the temperature ~~rise~~ immediately before ~~the catalyst bed~~ and ~~across~~ after each catalytic incinerator bed;

C. ~~The VOC concentration of each carbon adsorption bed.~~ For each carbon adsorption bed the VOC concentration and flow shall be monitored before and after the carbon adsorption bed. The monitor shall be equipped with a continuous recording device. An alternative continuous monitoring program may be used if the monitoring program can be demonstrated to be equally as effective, as determined by the director.

2. The continuous temperature monitoring equipment shall be equipped with a continuous recorder and have an accuracy of ±1 percent of the combustion temperature being measured expressed in degrees Celsius (°C) or ±0.5°C, whichever is greater.

3. The owner or operator shall ensure that the quality assurance measures in section 47.10. are met.

44.3. Determining the overall emission reduction efficiency. -- The overall emission reduction efficiency of the emission control system shall be determined each day as the product of the capture efficiency and the control device destruction or removal efficiency; or for each solvent recovery system, by the liquid/liquid test protocol. The results of the capture efficiency test and control device destruction or removal efficiency test remain valid for each day until a subsequent test is performed. The results of any valid test may be used for each day until superseded by the results of a valid test subsequently performed.

§45-21-45. Test Methods and Compliance Procedures: Determining the Destruction or Removal Efficiency of a Control Device.

45.1. Depending upon the conditions at a test site, one of the following test methods from 40 CFR Part 60, Appendix A, shall be used to determine volatile organic compound (VOC) concentrations of a gas stream at the inlet and outlet of a control device:

a. Method 18;

b. Method 25; or

c. Method 25A.

45.2. The method selected shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Because of the different response factors for the many organic compounds formed during the combustion process, only Method 25, which measures VOC as carbon, shall be used for determining destruction efficiency of incinerators or catalytic incinerators.

45.3. Except as indicated in sections 45.3.a. and 45.3.b., a test shall consist of three separate runs, each lasting a minimum of 60 minutes (min), unless the director determines that process variables dictate shorter sampling times.

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

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

45.4. Method 1 or 1A of 40 CFR Part 60, Appendix A, shall be used for velocity traverses.

45.5. Method 2, 2A, 2C, or 2D of 40 CFR Part 60, Appendix A, shall be used for velocity and volumetric flow rates.

45.6. Method 3 or 3A of 40 CFR Part 60, Appendix A, shall be used for O_2 and

CO_2 analysis.

45.7. Method 4 of 40 CFR Part 60, Appendix A, shall be used for stack gas moisture.

45.8. Methods 2, 2A, 2C, 2D, 3, 3A and 4 of 40 CFR Part 60, Appendix A, shall be performed, as applicable, at least ~~twice~~ once during each test run.

45.9. Use of adaptations to test methods. -- Use of an adaptation to any of the analytical methods specified in sections 45.1.and 45.4. through 45.8. may be approved by the director and the U.S. EPA on a case-by-case basis. An owner or operator shall submit sufficient documentation for the director and the U.S. EPA to find that the analytical methods specified in sections 45.1. and 45.4. through 45.8. will yield inaccurate results and that the proposed adaptation is appropriate.

§45-21-46. Test Methods and Compliance Procedures: Leak Detection Methods for Volatile Organic Compounds (VOCs).

46.1. Owners or operators required to carry out a leak detection monitoring program shall comply with the following requirements:

a. Monitoring shall be performed in accordance with Method 21 of 40 CFR Part 60, Appendix A.

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

c. The detection instrument shall be calibrated before and after use on each day of its use by the methods specified in Method 21. Failure to achieve a post-use calibration precision of ~~less than~~ 10 percent or less shall constitute grounds for rejecting all tests performed since the last pre-use calibration. In such cases, required leak tests shall be reperformed.

d. Calibration gases shall be:

1. Zero air (less than 10 parts per million [ppm] of hydrocarbon in air); and

2. A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

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

46.2. When equipment is tested for compliance with the requirement that there be no detectable emissions, the test shall comply with the following:

a. The requirements of sections 46.1.a. through 46.1.e. shall apply and shall be met; and

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

46.3. Leak detection tests shall be performed consistent with:

a. "APTI Course SI 417-Controlling Volatile Organic Compound Emissions from Leaking Process Equipment," EPA-450/2-82-015;

b. "Portable Instrument User's Manual for Monitoring VOC Sources," EPA-340/1-86-015;

c. "Protocols for Generating Unit-Specific Emission Estimates for Equipment Leaks of VOC and VHAP," EPA-450/3-88-010; and

d. "Petroleum Refinery Enforcement Manual," EPA-340/1-80-008.

46.4. Use of adaptations to test methods. -- Use of an adaptation to any of the analytical methods specified in sections 46.1., 46.2., and 46.3. may be approved by the director and the U.S. EPA on a case-by-case basis. An owner or operator shall submit sufficient documentation for the director and the U.S. EPA to find that the analytical methods specified in sections 46.1., 46.2., and 46.3. will yield inaccurate results and that the proposed adaptation is appropriate.

§45-21-47. Performance Specifications for Continuous Emissions Monitoring of Total Hydrocarbons.

47.1. Applicability.

a. This method applies to the measurement of total hydrocarbons as a surrogate measure for the total gaseous organic concentration of the combustion gas stream. The concentration is expressed in terms of propane.

b. The director and the U.S. EPA may approve the use of gas conditioning, including cooling to between 4.4 and 18°C (40 and 64°F), and condensate traps to reduce the moisture content of the sample gas if the owner/operator:

1. Successfully demonstrates to the director and the U.S. EPA that the use of such system is necessary for the specific application; and

2. Includes in the demonstration a quantification of the total hydrocarbon concentration (THC) lost to the gas conditioning system.

47.2. Principal. -- A gas sample is extracted from the source through a heated sample line and heated glass fiber filter to a flame ionization detector (FID). Results are reported as volume concentration equivalents of the propane.

47.3. Definitions. -- As used in this section 47., all terms not defined herein shall have the meaning given them in section 2.

a. "Calibration drift" means the difference in the measurement system response to a mid-level calibration gas before and after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

b. "Calibration error" means the difference between the gas concentration indicated by the measurement system and the known concentration of the calibration system.

c. "Calibration gas" means a known concentration of a gas in an appropriate diluent gas.

d. "Measurement system" means the total equipment required for the determination of the inlet and outlet gas concentrations, percent capture efficiency, and gas outlet emission rate. The system consists of the following major subsystems:

1. Sample interface--the portion of the system that is used for one or more of the following:

A. Sample acquisition;

B. Sample transportation;

C. Sample conditioning; or

D. Protection of the analyzer from the effects of the stack effluent;

2. Organic analyzer--the portion of the system that senses organic concentration and generates an output proportional to the gas concentration;

3. Data recorder--the portion of the system that records a permanent record of the measurement values; and

4. Flow rate system--a gas volume meter meeting the requirements of Method 2A, Section 2.1 (40 CFR Part 60, Appendix A).

e. "Response time" means the time interval from a step change in pollutant concentration at the inlet to the emission measurement system to the time at which 95 percent of the corresponding final value is reached as displayed on the recorder.

f. "Span value" means for most incinerators, a 50 parts per million (ppm) propane span. Higher span values may be necessary if propane emissions are significant. For convenience, the span value should correspond to 100 percent of the recorder scale.

g. "Zero drift" means the difference in the measurement system response to a zero level calibration gas before and after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

47.4. Apparatus. -- [Note: this method is often applied in highly explosive areas. Caution should be exercised in choice of equipment and installation.] An acceptable measurement system includes a sample interface system, a calibration valve, gas filter and a pump preceding the analyzer. THC measurement systems are designated HOT or COLD systems based on the operating temperatures of the system. In HOT systems, all components in contact with the sample gas (probe, calibration valve, filter, and sample lines) as well as all parts of the flame ionization analyzer between the sample inlet and the FID must be maintained between 150° to 175°C. This includes the sample pump if it is located on the inlet side of the FID. A condensate trap may be installed, if necessary, to prevent any condensate entering the FID. The essential components of the measurement system are as follows:

a. Organic concentration analyzer. -- An FID capable of meeting or exceeding the specifications in this method.

b. Sample probe.

1. Stainless steel, or equivalent, three-hole rake type. Sample holes shall be 4 millimeters (mm) (0.2 inches [in.] in diameter or smaller and located at 16.7, 50, and 83.3 percent of the equivalent stack diameter; or

2. A single opening probe so that a gas sample is collected from the centrally located 10 percent area of the stack cross section.

c. Sample line. -- Stainless steel or Teflon[1] tubing to transport the sample gas to the analyzer. The sample line from the heated probe shall be heated to between 150 and 175°C (302 and 347°F).

d. Calibration valve assembly.

1. A heated three-way valve assembly to direct the zero and calibration gases to the analyzers; or

2. Other methods, such as quick-connect lines, to route calibration gas to the analyzers.

e. Particulate filter. -- An in-stack or an out-of-stack glass fiber filter if exhaust gas particulate loading is significant. An out-of-stack filter must be heated.

f. Recorder. -- A strip-chart recorder, analog computer, or digital recorder for recording measurement data. The minimum data recording shall be one measurement value per minute.

47.5. Calibration gases and other gases.

a. Gases used for calibration, fuel, and combustion air shall be contained in compressed gas cylinders.

b. Preparation of calibration gases shall be done according to the procedure in Protocol No. 1, listed in the reference in section 47.12.b.

c. The recommended shelf life for each calibration gas cylinder over

[1]Mention of trade names or specific products does not constitute endorsement by the WV Air Pollution Control Commission.

which the concentration does not change more than ±2 percent from the certified value shall be obtained from the cylinder manufacturer.

d. The following calibration and other gases shall be used:

1. Fuel. -- A 40 percent hydrogen and 60 percent helium or 40 percent hydrogen and 60 percent nitrogen gas mixture to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2. Zero gas. -- High purity air with less than 0.1 parts per million by volume (ppmv) of organic material methane or carbon equivalent or less than 0.1 percent of the span value, whichever is greater.

3. Low-level calibration gas. -- Propane calibration gas (in air or nitrogen) with a concentration equivalent to 20 to 30 percent of the applicable span value.

4. Mid-level calibration gas. -- Propane calibration gas with a concentration equivalent to 45 to 55 percent of the applicable span value.

5. High-level calibration gas. Propane calibration gas with a concentration equivalent to 80 to 90 percent of the applicable span value.

47.6. Measurement system performance specifications.

a. Zero drift shall be less than ±3 percent of the span value.

b. Calibration drift shall be less than ±3 percent of the span value.

c. Calibration error shall be less than ±5 percent of the calibration gas value.

47.7. Pretest preparations.

a. Selection of sampling site.

1. The location of the sampling site shall be determined from the applicable regulation or purpose of the test (i.e., exhaust stack, inlet line, etc).

2. The sample port shall be located at least 1.5 meters (4.9 feet) or 2 equivalent diameters upstream of the gas discharge to the atmosphere.

b. Location of sample probe. -- The sample probe must be installed so that the probe is centrally located in the stack, pipe or duct and is sealed tightly at the stack port connection.

c. Measurement systems preparation. -- Prior to the emission test, the measurement system must be assembled following the manufacturer's written instructions in preparing the sample interface and the organic analyzer. The system must be operable.

d. Calibration error test.

1. Immediately prior to the test series (within 2 hours of the start of the test), zero gas and high-level calibration gas shall be introduced at the calibration valve assembly.

2. The analyzer output shall be adjusted to the appropriate levels, if necessary.

3. The predicted response for the low-level and mid-level gases shall be calculated based on a linear response line between the zero and high-level responses.

4. Low-level and mid-level calibration gases shall be introduced successively to the measurement system.

5. The analyzer responses for low-level and mid-level calibration gases shall be recorded, and the differences between the measurement system responses and the predicted responses shall be determined. These differences must be less than ±5 percent of the respective calibration gas value. If not, the measurement system shall be deemed not acceptable and must be replaced or repaired prior to testing. No adjustments to the measurement system shall be conducted after the calibration and before the drift determination found in section 47.8.b.

6. If adjustments are necessary before the completion of the test series, the drift checks shall be performed prior to the required adjustments, and the calibration following the adjustments shall be repeated.

7. If multiple electronic ranges are to be used, each additional range must be checked with a mid-level calibration gas to verify the multiplication factor.

e. Response time test.

1. Zero gas shall be introduced into the measurement system at

the calibration valve assembly.

2. When the system output has stabilized, the owner or operator shall switch quickly to the high-level calibration gas.

3. The time shall be recorded from the concentration change to the measurement system response equivalent to 95 percent of the step change.

4. The test shall be repeated three times and the results averaged.

47.8. Emission measurement test procedure.

a. Organic measurement.

1. Sampling shall begin at the start of the test period.

2. Time and any required process information shall be recorded, as appropriate.

3. Periods of process interruption or cyclic operation shall be noted on the recording chart.

b. Drift determination.

1. Immediately following the completion of the test period and hourly during the test period, the zero and mid-level calibration gases shall be introduced, one at a time, to the measurement system at the calibration valve assembly. No adjustments to the measurement system shall be made until after both the zero and calibration drift checks are made.

2. The analyzer response shall be recorded.

3. If the drift values exceed the specified limits, the test results shall be invalidated preceding the check, and the test shall be repeated following corrections to the measurement system.

4. Alternatively, the test measurement system may be recalibrated as in ~~paragraph (g)(4) of this~~ section 47.7.d. and the results reported using both sets of calibration data (i.e., data determined prior to the test period and data determined following the test period).

47.9. Organic concentration calculations. -- The average organic concentration shall be determined in terms of ppmv propane by the integration of the

output recording over the period specified in the applicable regulation.

47.10. Quality assurance.

a. The owner or operator shall assure proper calibration, maintenance, and operation of the continuous emissions monitoring system on a continual basis.

b. The owner or operator shall establish a quality assurance program to evaluate and monitor performance on a continual basis. The following checks shall routinely be done:

1. A daily calibration check for each monitor. The calibration shall be adjusted if the check indicates the instrument's calibration drift exceeds the specification established in ~~paragraph (f) of this~~ section 47.6.;

2. A daily system audit which includes the following:

A. A review of the calibration check data;

B. An inspection of the recording system;

C. An inspection of the control panel warning lights; and

D. An inspection of the sample transport/interface system (e.g., flowmeters, filters), as appropriate;

3. A quarterly calibration error test at the span midpoint; and

4. The entire performance specification test repeated every second year.

47.11. Reporting of total hydrocarbon levels.

a. The total hydrocarbon concentration (THC) levels from the initial compliance certification test shall be reported as ppm propane for inlet and outlet concentrations and as a percent reduction across the control device.

b. THC levels shall be expressed in milligrams per second (mg/sec) (pounds per second [lb/sec]).

c. This conversion shall be accomplished using the following equation:

THC, mg/sec = (THC ppm propane) x (stack gas flow) x 2.8×10^{-2}

where:

THC ppm propane	=	the total hydrocarbon concentration as actually measured by this method in ppm propane at the inlet or outlet.
Stack gas flow	=	measured in dry standard cubic feet as time needed as determined by the flowmeter system or Methods 2 and 4 of 40 CFR Part 60, Appendix A.
2.8×10^{-2}	=	constant to account for the conversion of units.

47.12. References.

a. Measurement of Volatile Organic Compounds--Guideline Series. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. Publication No. EPA-450/2-78-041. June 1978. p. 46-54.

b. Traceability Protocol for Establishing True Concentrations of Gases Used for Calibration and Audits of Continuous Source Emission Monitors (Protocol No. 1). U. S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory. Research Triangle Park, North Carolina. June 1973.

c. Gasoline Vapor Emission Laboratory Evaluation--Part 2. U. S. Environmental Protection Agency. Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina. EMB Report No. 75-GAS-6. August 1975.

d. Methods Manual for Compliance with the BIF Regulations--Burning Hazardous Waste in Boilers and Industrial Furnaces, EPA/530-SW-91-010, December 1990: Section 2.0 - "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste", pages 2-1 through 2-35.

§45-21-48. Quality Control Procedures for Continuous Emission Monitoring Systems (CEMS).

48.1. CEMS quality control (QC) program. -- Each owner or operator of a CEMS shall develop and implement a CEMS QC program. At a minimum, each QC program shall include written procedures that describe in detail step-by-step procedures and operations for each of the following:

a. Initial and routine periodic calibration of the CEMS.

b. Calibration drift (CD) determination and adjustment of the CEMS.

c. Preventative maintenance of the CEMS (including spare parts inventory).

d. Data recording, calculations, and reporting.

e. Accuracy audit procedures including sampling and analysis methods.

f. Program of corrective action for malfunctioning CEMS.

48.2. Determining out-of-control condition for the CEMS.

a. If either the zero (or low-level) or high-level CD exceeds twice the applicable drift specification in 40 CFR Part 60, Appendix B, for five consecutive daily periods, the CEMS is out-of-control.

b. If either the zero (or low-level) or high-level CD exceeds four times the applicable drift specification in 40 CFR Part 60, Appendix B, during any CD check, the CEMS is out-of-control.

c. If the CEMS fails a performance audit (PA), the CEMS is out-of-control.

48.3. Determining the out-of-control time period for the CEMS.

a. The beginning of the out-of-control period is:

1. The time corresponding to the completion of the fifth consecutive daily CD check with CD in excess of two times the allowable limit, or

2. The time corresponding to completion of the daily CD

check preceding the daily CD check that results in a CD in excess of four times the allowable limit.

b. The end of the out-of-control period is the time corresponding to the completion of the CD check following corrective action that results in the CD's at both the zero (or low-level) and high-level measurement points being within the corresponding allowable CD limit (i.e., either two times or four times the allowable limit in 40 CFR Part 60, Appendix B).

c. If the CEMS failed a PA, the beginning of the out-of-control period is the time corresponding to the completion of the failed audit test. The end of the out-of-control period is the time corresponding to a successful retest of the PA sample.

48.4. Recordkeeping. -- The owner or operator shall keep the QC procedure described in section 48.1. in a readily accessible location for at least 3 years and shall make the procedure available to the director upon verbal or written request.

48.5. Reporting. -- The owner or operator shall submit all information concerning out-of-control periods including beginning and end dates and descriptions of corrective actions taken in the excess emissions report defined in 40 CFR 60.7(c).

APPENDIX A--VOC CAPTURE EFFICIENCY

Procedure F.1 - Fugitive VOC Emissions from Temporary Enclosures

1. INTRODUCTION

1.1 **Applicability.** This procedure is applicable for determining the fugitive volatile organic compounds (VOC) emissions from a temporary total enclosure (TTE). It is intended to be used as a segment in the development of liquid/gas or gas/gas protocols for determining VOC capture efficiency (CE) for surface coating and printing operations.

1.2 **Principle.** The amount of fugitive VOC emissions (F) from the TTE is calculated as the sum of the products of the VOC content (C_{Fj}), the flow rate (Q_{Fj}), and the sampling time (θ_F) from each fugitive emissions point.

1.3 **Estimated Measurement Uncertainty.** The measurement uncertainties are estimated for each fugitive emission point as follows: Q_{Fj} = ±5.5 percent and C_{Fj} = ±5.0 percent. Based on these numbers, the probable uncertainty for F is estimated at about ±7.4 percent.

1.4 **Sampling Requirements.** A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 **Notes.** Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, ppm) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 **Gas VOC Concentration.** A schematic of the measurement system is shown in Figure F.1-1. The main components are described below:

2.1.1 **Sample Probe.** Stainless steel or equivalent. The probe must be heated to prevent VOC condensation.

2.1.2 **Calibration Valve Assembly.** Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

2.1.3 **Sample Line.** Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent condensation.

2.1.4 **Sample Pump.** A leak-free pump to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contact the gas stream should be constructed of stainless steel or Teflon. The sample pump must be heated to prevent condensation.

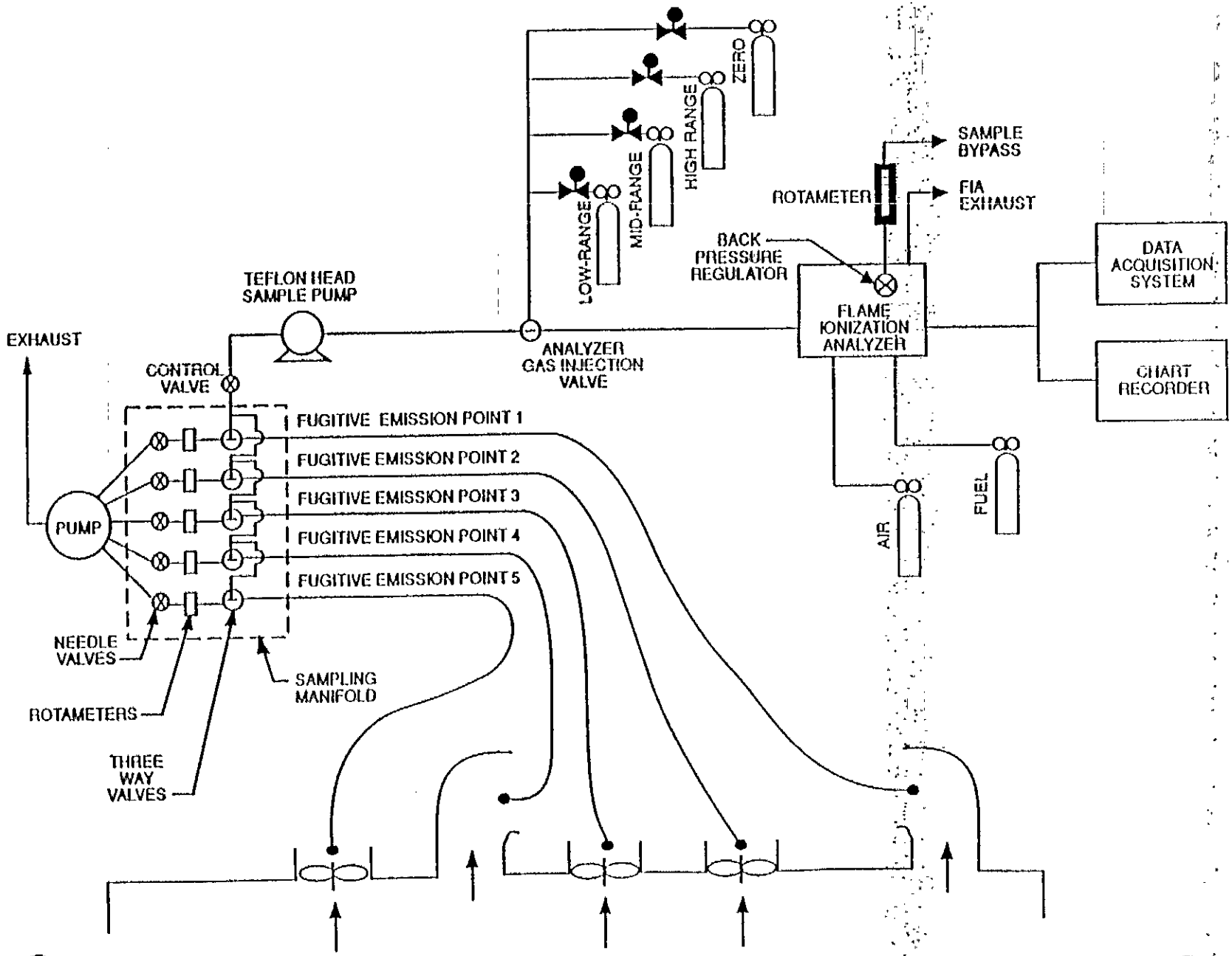


Figure F.1-1 Fugitive emissions measurement system.

2.1.5 **Sample Flow Rate Control.** A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 **Sample Gas Manifold.** Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA) and the remainder to the bypass discharge vent. The manifold components should be constructed of stainless steel or Teflon. If emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold and connecting lines to the FIA must be heated to prevent condensation.

2.1.7 **Organic Concentration Analyzer.** An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.1.7.1 **Zero Drift.** Less than ±3.0 percent of the span value.

2.1.7.2 **Calibration Drift.** Less than ±3.0 percent of the span value.

2.1.7.3 **Calibration Error.** Less than ±5.0 percent of the calibration gas value.

2.1.7.4 **Response Time.** Less than 30 seconds.

2.1.8 **Integrator/Data Acquisition System.** An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 seconds. The device shall be capable of recording average values at least once per minute (min).

2.1.9 **Calibration and Other Gases.** Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to National Institute of Standards and Testing (NIST) standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.1.9.1 **Fuel.** A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 **Carrier Gas.** High-purity air with less than 1 ppm of organic material (as propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 **FIA Linearity Calibration Gases.** Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.1.10 **Particulate Filter.** An in-stack or an out-of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out-of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 **Fugitive Emissions Volumetric Flow Rate.**

2.2.1 **Method 2 or 2A Apparatus.** For determining volumetric flow rate.

2.2.2 **Method 3 Apparatus and Reagents.** For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.3 **Method 4 Apparatus and Reagents.** For determining moisture content, if necessary.

2.3 **Temporary Total Enclosure.** The criteria for designing a TTE are discussed in Appendix T.

3. DETERMINATION OF VOLUMETRIC FLOW RATE OF FUGITIVE EMISSIONS

3.1 Locate all points where emissions are exhausted from the TTE. Using Method 1, determine the sampling points. Be sure to check each site for cyclonic or swirling flow.

3.2 Measure the velocity at each sampling site at least once every hour during each sampling run using Method 2 or 2A.

4. DETERMINATION OF VOC CONTENT OF FUGITIVE EMISSIONS

4.1 **Analysis Duration.** Measure the VOC responses at each fugitive emission point during the entire test run or, if applicable, while the process is operating. If there are multiple emission locations, design a sampling system to allow a single FIA to be used to determine the VOC responses at all sampling locations.

4.2 **Gas VOC Concentration.**

4.2.1 Assemble the sample train as shown in Figure F.1-1. Calibrate the FIA and conduct a system check according to the procedures in Sections 5.1 and 5.3, respectively.

4.2.2 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct and is sealed tightly at the stack port connection.

4.2.3 Inject zero gas at the calibration valve assembly. Allow the measurement system response to reach zero. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.

4.2.4 Conduct a system check before and a system drift check after each sampling run

according to the procedures in Sections 5.2 and 5.3. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect to perform system drift checks during the run not to exceed one drift check per hour.

4.2.5 Verify that the sample lines, filter, and pump temperatures are 120 ± 5°C.

4.2.6 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 min) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least 4 separate measurements from each sample point during each hour of testing. Disregard the response measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 min and record the concentration measurements.

4.3 Background Concentration.

4.3.1 Determination of VOC Background Concentration.

4.3.1.1 Locate all natural draft openings (NDO's) of the TTE. A sampling point shall be centrally located outside of the TTE at four equivalent diameters from each NDO, if possible. If there are more than six NDO's, choose six sampling points evenly spaced among the NDO's.

4.3.1.2 Assemble the sample train as shown in Figure F.1-2. Calibrate the FIA and conduct a system check according to the procedures in Sections 5.1 and 5.3.

4.3.1.3 Position the probe at the sampling location.

4.3.1.4 Determine the response time, conduct the system check, and sample according to the procedures described in Sections 4.2.3 to 4.2.6.

4.4 Alternative Procedure. The direct interface sampling and analysis procedure described in Section 7.2 of Method 18 may be used to determine the gas VOC concentration. The system must be designed to collect and analyze at least one sample every 10 min.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat

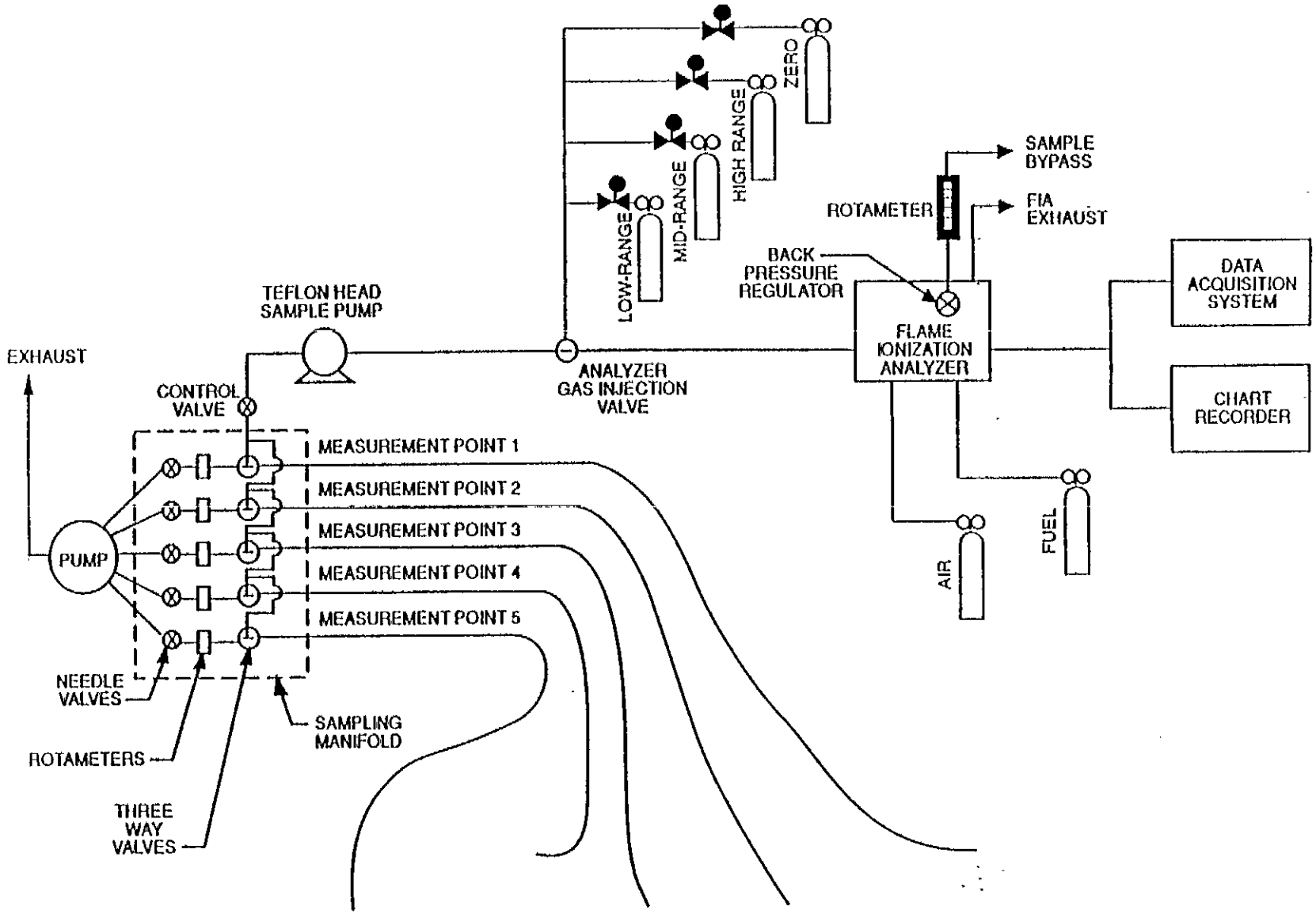


Figure F.1-2 Background measurement system.

the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 **System Drift Checks.** Select the calibration gas concentration that most closely approximates that of the fugitive gas emissions to conduct the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in Section 5.1 is less than 3 percent of the span value. Conduct a system drift check at the end of each run.

5.3 **System Check.** Inject the high-range calibration gas at the inlet of the sampling probe and record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in Section 5.1 for the high-range calibration gas. Conduct a system check before each test run.

5.4 **Analysis Audit.** Immediately before each test, analyze an audit cylinder as described in Section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

A_i = area of NDO, square feet (ft^2).

A_N = total area of all NDO's in the enclosure, ft^2.

C_{Bi} = corrected average VOC concentration of background emissions at point i, parts per million (ppm) propane.

C_B = average background concentration, ppm propane.

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane.

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane.

C_{Fj} = corrected average VOC concentration of fugitive emissions at point j, ppm propane.

C_H = actual concentration of the drift check calibration gas, ppm propane.

C_i = uncorrected average background VOC concentration at point i, ppm propane.

C_j = uncorrected average VOC concentration measured at point j, ppm propane.

F = total VOC content of fugitive emissions, kilograms (kg).

K_1 = 1.830×10^{-6} kilograms per cubic meters - parts per million (kg /[m^3-ppm]).

n = number of measurement points.

Q_{Fj} = average effluent volumetric flow rate corrected to standard

conditions at fugitive emissions point j, cubic meters per minute (m^3/min).

θ_F = total duration of fugitive emissions sampling run, min.

7. CALCULATIONS

7.1 Total VOC Fugitive Emissions.

$$F = \sum_{j=1}^{n} (C_{Fj} - C_B) Q_{Fj} \theta_F K_1$$

7.2 VOC Concentration of the Fugitive Emissions at Point j.

$$C_{Fj} = (C_j - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}}$$

7.3 Background VOC Concentration at Point i.

$$C_{Bi} = (C_i - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}}$$

7.4 Average Background Concentration.

$$C_B = \frac{\sum_{i=1}^{n} C_{Bi} A_i}{A_N}$$

NOTE: If the concentration at each point is within 20 percent of the average concentration of all points, the simple average concentration may be used:

$$C_B = \frac{\sum_{i=1}^{n} C_{Bi}}{n}$$

Procedure F.2 - Fugitive VOC Emissions from Building Enclosures

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the fugitive volatile organic compounds (VOC) emissions from a building enclosure (BE). It is intended to be used as a segment in the development of liquid/gas or gas/gas protocols for determining VOC capture efficiency (CE) for surface coating and printing operations.

1.2 Principle. The total amount of fugitive VOC emissions (F_B) from the BE is calculated as the sum of the products of the VOC content (C_{Fj}) of each fugitive emissions point, its flow rate (Q_{Fj}), and time (θ_F).

1.3 Measurement Uncertainty. The measurement uncertainties are estimated for each fugitive emissions point as follows: Q_{Fj} = ±5.0 percent and C_{Fj} = ±5.0 percent. Based on these numbers, the probable uncertainty for F_B is estimated at about ±11.2 percent.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, parts per million [ppm]) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Gas VOC Concentration. A schematic of the measurement system is shown in Figure F.2-1. The main components are described below:

2.1.1 Sample Probe. Stainless steel or equivalent. The probe shall be heated to prevent VOC condensation.

2.1.2 Calibration Valve Assembly. Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

2.1.3 Sample Line. Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent condensation.

2.1.4 Sample Pump. A leak-free pump to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contact the gas stream shall be constructed of stainless steel or Teflon. The sample pump must be heated to prevent condensation.

2.1.5 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow rate

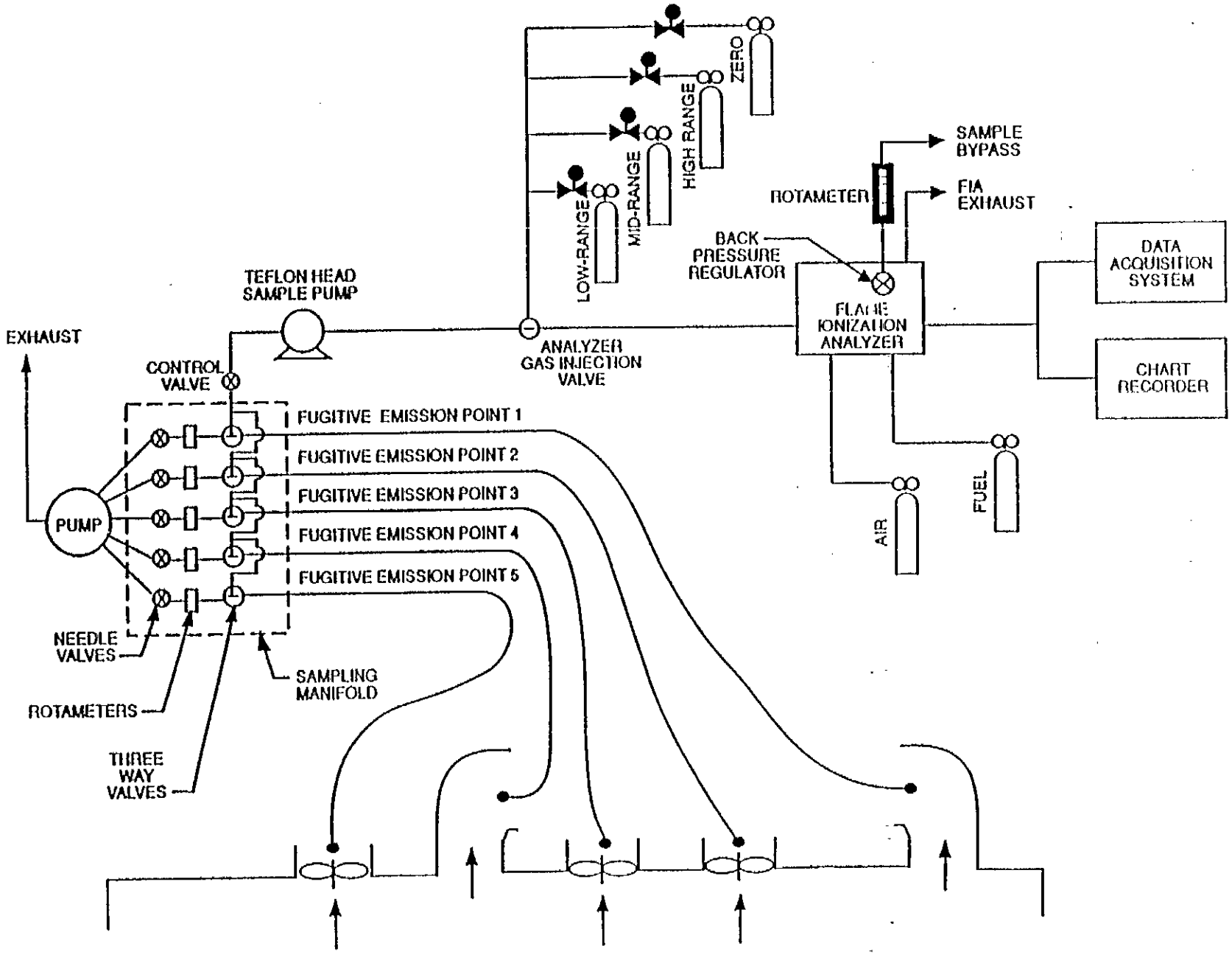


Figure F.2-1 Fugitive emissions measurement system.

control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 Sample Gas Manifold. Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA) and the remainder to the bypass discharge vent. The manifold components shall be constructed of stainless steel or Teflon. If emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold must be heated to prevent condensation.

2.1.7 Organic Concentration Analyzer. An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.1.7.1 Zero Drift. Less than ±3.0 percent of the span value.

2.1.7.2 Calibration Drift. Less than ±3.0 percent of the span value.

2.1.7.3 Calibration Error. Less than ±5.0 percent of the calibration gas value.

2.1.7.4 Response Time. Less than 30 seconds (sec).

2.1.8 Integrator/Data Acquisition System. An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 sec. The device shall be capable of recording average values at least once per minute (min).

2.1.9 Calibration and Other Gases. Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to National Institute of Standards and Testing (NIST) standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.1.9.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 Carrier Gas. High purity air with less than 1 ppm of organic material (propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 FIA Linearity Calibration Gases. Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values

may be used if it can be shown that more accurate measurements would be achieved.

2.1.10 Particulate Filter. An in-stack or an out-of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out-of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 Fugitive Emissions Volumetric Flow Rate.

2.2.1 Flow Direction Indicators. Any means of indicating inward or outward flow, such as light plastic film or paper streamers, smoke tubes, filaments, and sensory perception.

2.2.2 Method 2 or 2A Apparatus. For determining volumetric flow rate. Anemometers or similar devices calibrated according to the manufacturer's instructions may be used when low velocities are present. Vane anemometers (Young-maximum response propeller), specialized pitots with electronic manometers (e.g., Shortridge Instruments Inc., Airdata Multimeter 860) are commercially available with measurement thresholds of 15 and 8 meters per minute (mpm) (50 and 25 feet per minute [fpm]), respectively.

2.2.3 Method 3 Apparatus and Reagents. For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.4 Method 4 Apparatus and Reagents. For determining moisture content, if necessary.

3. DETERMINATION OF VOLUMETRIC FLOW RATE OF FUGITIVE EMISSIONS

3.1 Preliminary Determinations. The purpose of this exercise is to determine which exhaust points should be measured for volumetric flow rates and VOC concentrations.

3.1.1 Forced Draft Openings. Identify all forced draft openings. Determine the volumetric flow rate according to Method 2.

3.1.2 NDO's Exhaust Points. The natural draft openings (NDO's) in the roof of a facility are considered to be exhaust points. Determine volumetric flow rate from these NDO's. Divide the cross-sectional area according to Method 1 using 12 equal areas. Use the appropriate velocity measurement devices (e.g., propeller anemometers).

3.1.3 Other NDO's.

3.1.3.1 This step is optional. Determine the exhaust flow rate, including that of the control device, from the enclosure and the intake air flow rate. If the exhaust flow rate divided by the intake air flow rate is greater than 1.1, then all other NDO's are not considered to be significant exhaust points. 3.1.3.2 If the option above is not taken, identify all other NDO's and other potential points through which fugitive emissions may escape the enclosure.

Then use the following criteria to determine whether flow rates and VOC concentrations need to be measured:

3.1.3.2.1 Using the appropriate flow direction indicator, determine the flow direction. An NDO with zero or inward flow is not an exhaust point.

3.1.3.2.2 Measure the outward volumetric flow rate from the remainder of the NDO's. If the collective flow rate is 2 percent, or less, of the flow rate from Sections 3.1.1 and 3.1.2, then these NDO's, except those within two equivalent diameters (based on NDO opening) from VOC sources, may be considered to be non-exhaust points.

3.1.3.2.3 If the percentage calculated in Section 3.1.3.2.2 is greater than 2 percent, those NDO's (except those within two equivalent diameters from VOC sources) whose volumetric flow rate total 2 percent of the flow rate from Sections 3.1.1 and 3.1.2 may be considered as non-exhaust points. All remaining NDO's shall be measured for volumetric flow rate and VOC concentrations during the CE test.

3.1.3.2.4 The tester may choose to measure VOC concentrations at the forced exhaust points and the NDO's. If the total VOC emissions from the NDO's are less than 2 percent of the emissions from the forced draft and roof NDO's, then these NDO's may be eliminated from further consideration.

3.2 Determination of Flow Rates.

3.2.1 Measure the volumetric flow rate at all locations identified as exhaust points in Section 3.1. Divide each exhaust opening into 9 equal areas for rectangular openings and 8 for circular openings.

3.2.2 Measure the velocity at each site at least once every hour during each sampling run using Method 2 or 2A, if applicable, or using the low velocity instruments in Section 2.2.2.

4. DETERMINATION OF VOC CONTENT OF FUGITIVE EMISSIONS

4.1 Analysis Duration. Measure the VOC responses at each fugitive emission point during the entire test run or, if applicable, while the process is operating. If there are multiple emissions locations, design a sampling system to allow a single FIA to be used to determine the VOC responses at all sampling locations.

4.2 Gas VOC Concentration.

4.2.1 Assemble the sample train as shown in Figure F.2-1. Calibrate the FIA and conduct a system check according to the procedures in Sections 5.1 and 5.3, respectively.

4.2.2 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct and is sealed tightly at the stack port connection.

4.2.3 Inject zero gas at the calibration valve assembly. Allow the measurement system response to reach zero. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.

4.2.4 Conduct a system check before and a system drift check after each sampling run according to the procedures in Sections 5.2 and 5.3. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect

to perform drift checks during the run not to exceed one drift check per hour.

4.2.5 Verify that the sample lines, filter, and pump temperatures are 120 ± 5°C.

4.2.6 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 min) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least four separate measurements from each sample point during each hour of testing. Disregard the response measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 min and record the concentration measurements.

4.3 **Alternative Procedure** The direct interface sampling and analysis procedure described in Section 7.2 of Method 18 may be used to determine the gas VOC concentration. The system must be designed to collect and analyze at least one sample every 10 min.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 **FIA Calibration and Linearity Check.** Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 **Systems Drift Checks.** Select the calibration gas that most closely approximates the concentration of the captured emissions for conducting the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in Section 5.1 is less than 3 percent of the span value. Conduct a system drift check at the end of each run.

5.3 **System Check.** Inject the high range calibration gas at the inlet of the sampling probe and record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in Section 5.1

for the high range calibration gas. Conduct a system check before each test run.

5.4 Analysis Audit. Immediately before each test analyze an audit cylinder as described in Section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane.

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane.

C_{Fj} = corrected average VOC concentration of fugitive emissions at point j, ppm propane.

C_H = actual concentration of the drift check calibration gas, ppm propane.

C_j = uncorrected average VOC concentration measured at point j, ppm propane.

F_B = total VOC content of fugitive emissions from the building, kilograms (kg).

K_1 = 1.830×10^{-6} kilograms per cubic meter - parts per million (kg/[m^3-ppm]).

n = number of measurement points.

Q_{Fj} = average effluent volumetric flow rate corrected to standard conditions at fugitive emissions point j, cubic meter per minute (m^3/min).

θ_F = total duration of capture efficiency sampling run, min.

7. CALCULATIONS

7.1 Total VOC Fugitive Emissions From the Building.

$$F_B = \sum_{j=1}^{n} C_{Fj}\, Q_{Fj}\, \theta_F\, K_1$$

7.2 VOC Concentration of the Fugitive Emissions at Point j.

$$C_{Fj} = (C_j - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}}$$

Procedure G.1 - Captured VOC Emissions

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the volatile organic compounds (VOC) content of captured gas streams. It is intended to be used as a segment in the development of liquid/gas or gas/gas protocols for determining VOC capture efficiency (CE) for surface coating and printing operations. The procedure may not be acceptable in certain site-specific situations, e.g., when: (1) direct fired heaters or other circumstances affect the quantity of VOC at the control device inlet and (2) particulate organic aerosols are formed in the process and are present in the captured emissions.

1.2 Principle. The amount of VOC captured (G) is calculated as the sum of the products of the VOC content (C_{Gj}), the flow rate (Q_{Gj}), and the sample time (θ_c) from each captured emissions point.

1.3 Estimated Measurement Uncertainty. The measurement uncertainties are estimated for each captured or fugitive emissions point as follows: Q_{Gj} = ±5.5 percent and C_{Gj} = ±5.0 percent. Based on these numbers, the probable uncertainty for G is estimated at about ±7.4 percent.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, parts per million [ppm]) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Gas VOC Concentration. A schematic of the measurement system is shown in Figure G.1-1. The main components are described below:

2.1.1 Sample Probe. Stainless steel or equivalent. The probe must be heated to prevent VOC condensation.

2.1.2 Calibration Valve Assembly. Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

2.1.3 Sample Line. Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent VOC condensation.

2.1.4 Sample Pump. A leak-free pump, to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contact the gas stream shall be constructed of stainless

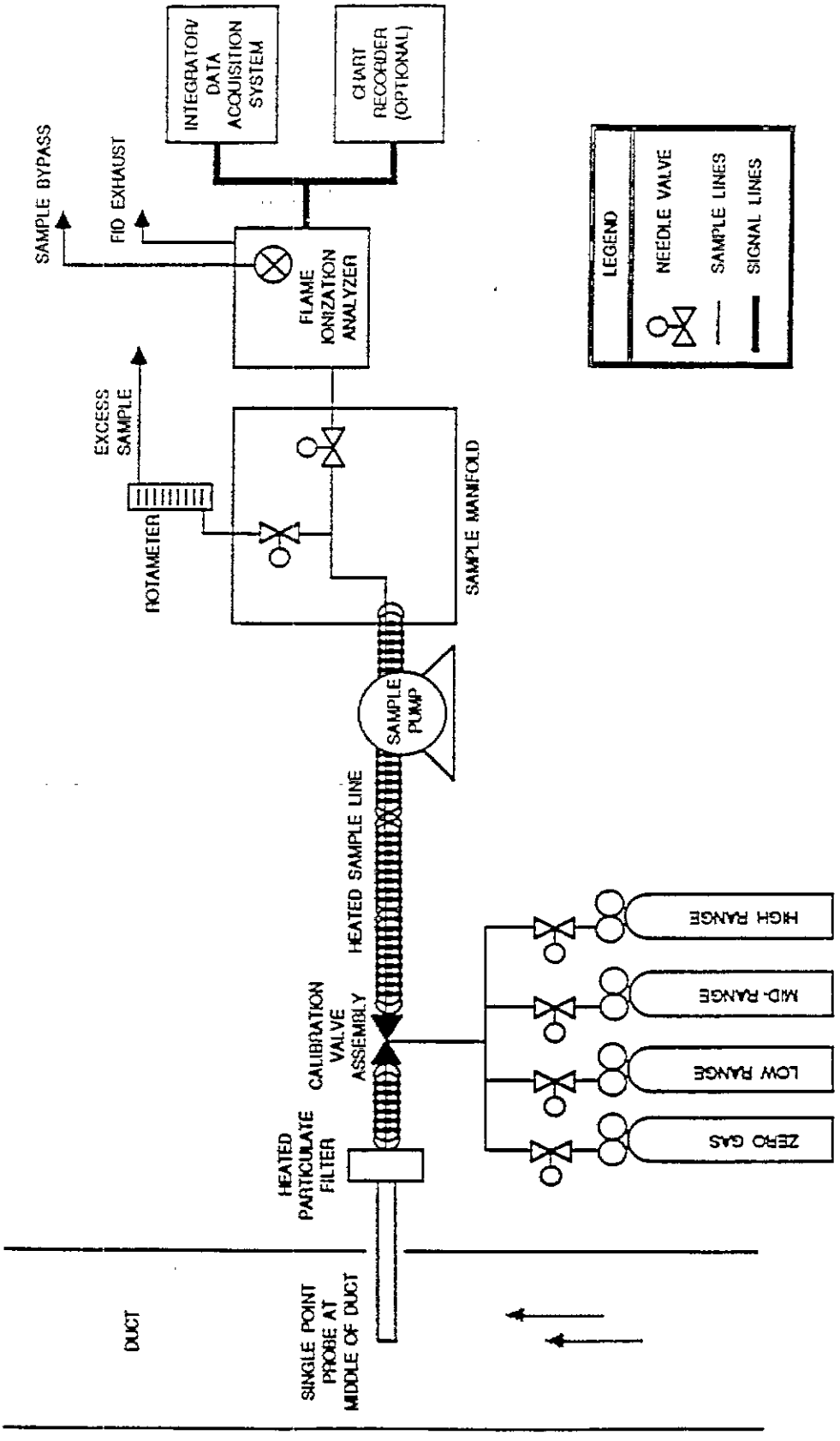


Figure G.1-1 Gas VOC concentration measurement system.

steel or Teflon. The sample pump must be heated to prevent condensation.

2.1.5 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow rate control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 Sample Gas Manifold. Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA) and the remainder to the bypass discharge vent. The manifold components shall be constructed of stainless steel or Teflon. If captured or fugitive emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold and connecting lines to the FIA must be heated to prevent condensation.

2.1.7 Organic Concentration Analyzer. An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.1.7.1 Zero Drift. Less than ±3.0 percent of the span value.

2.1.7.2 Calibration Drift. Less than ±3.0 percent of the span value.

2.1.7.3 Calibration Error. Less than ±5.0 percent of the calibration gas value.

2.1.7.4 Response Time. Less than 30 seconds (sec).

2.1.8 Integrator/Data Acquisition System. An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 sec. The device shall be capable of recording average values at least once per minute (min).

2.1.9 Calibration and Other Gases. Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to National Institute of Standards and Testing (NIST) standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.1.9.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 Carrier Gas. High purity air with less than 1 parts per million (ppm) of organic material (as propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 **FIA Linearity Calibration Gases.** Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.1.10 **Particulate Filter.** An in-stack or an out-of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out-of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 **Captured Emissions Volumetric Flow Rate.**

2.2.1 **Method 2 or 2A Apparatus.** For determining volumetric flow rate.

2.2.2 **Method 3 Apparatus and Reagents.** For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.3 **Method 4 Apparatus and Reagents.** For determining moisture content, if necessary.

3. **DETERMINATION OF VOLUMETRIC FLOW RATE OF CAPTURED EMISSIONS**

3.1 Locate all points where emissions are captured from the affected facility. Using Method 1, determine the sampling points. Be sure to check each site for cyclonic or swirling flow.

3.2 Measure the velocity at each sampling site at least once every hour during each sampling run using Method 2 or 2A.

4. **DETERMINATION OF VOC CONTENT OF CAPTURED EMISSIONS**

4.1 **Analysis Duration.** Measure the VOC responses at each captured emissions point during the entire test run or, if applicable, while the process is operating. If there are multiple captured emission locations, design a sampling system to allow a single FIA to be used to determine the VOC responses at all sampling locations.

4.2 **Gas VOC Concentration.**

4.2.1 Assemble the sample train as shown in Figure G.1-1. Calibrate the FIA according to the procedure in Section 5.1.

4.2.2 Conduct a system check according to the procedure in Section 5.3.

4.2.3 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct and is sealed tightly at the stack port connection.

4.2.4 Inject zero gas at the calibration valve assembly. Allow the measurement system response to reach zero. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.

4.2.5 Conduct a system check before and a system drift check after each sampling run according to the procedures in Sections 5.2 and 5.3. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect

to perform system drift checks during the run not to exceed one drift check per hour.

4.2.6 Verify that the sample lines, filter, and pump temperatures are 120 ± 5°C.

4.2.7 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple captured emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 min) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least four separate measurements from each sample point during each hour of testing. Disregard the measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 min and record the concentration measurements.

4.3 **Background Concentration.**

4.3.1 Locate all natural draft openings (NDO's) of the temporary total enclosure (TTE). A sampling point shall be centrally located outside of the TTE at four equivalent diameters from each NDO, if possible. If there are more than six NDO's, choose six sampling points evenly spaced among the NDO's.

4.3.2 Assemble the sample train as shown in Figure G.1-2. Calibrate the FIA and conduct a system check according to the procedures in Sections 5.1 and 5.3. **NOTE:** This sample train shall be a separate sampling train from the one to measure the captured emissions.

4.3.3 Position the probe at the sampling location.

4.3.4 Determine the response time, conduct the system check, and sample according to the procedures described in Sections 4.2.4 to 4.2.7.

4.4 **Alternative Procedure.** The direct interface sampling and analysis procedure described in Section 7.2 of Method 18 may be used to determine the gas VOC concentration. The system must be designed to collect and analyze at least one sample every 10 min.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the

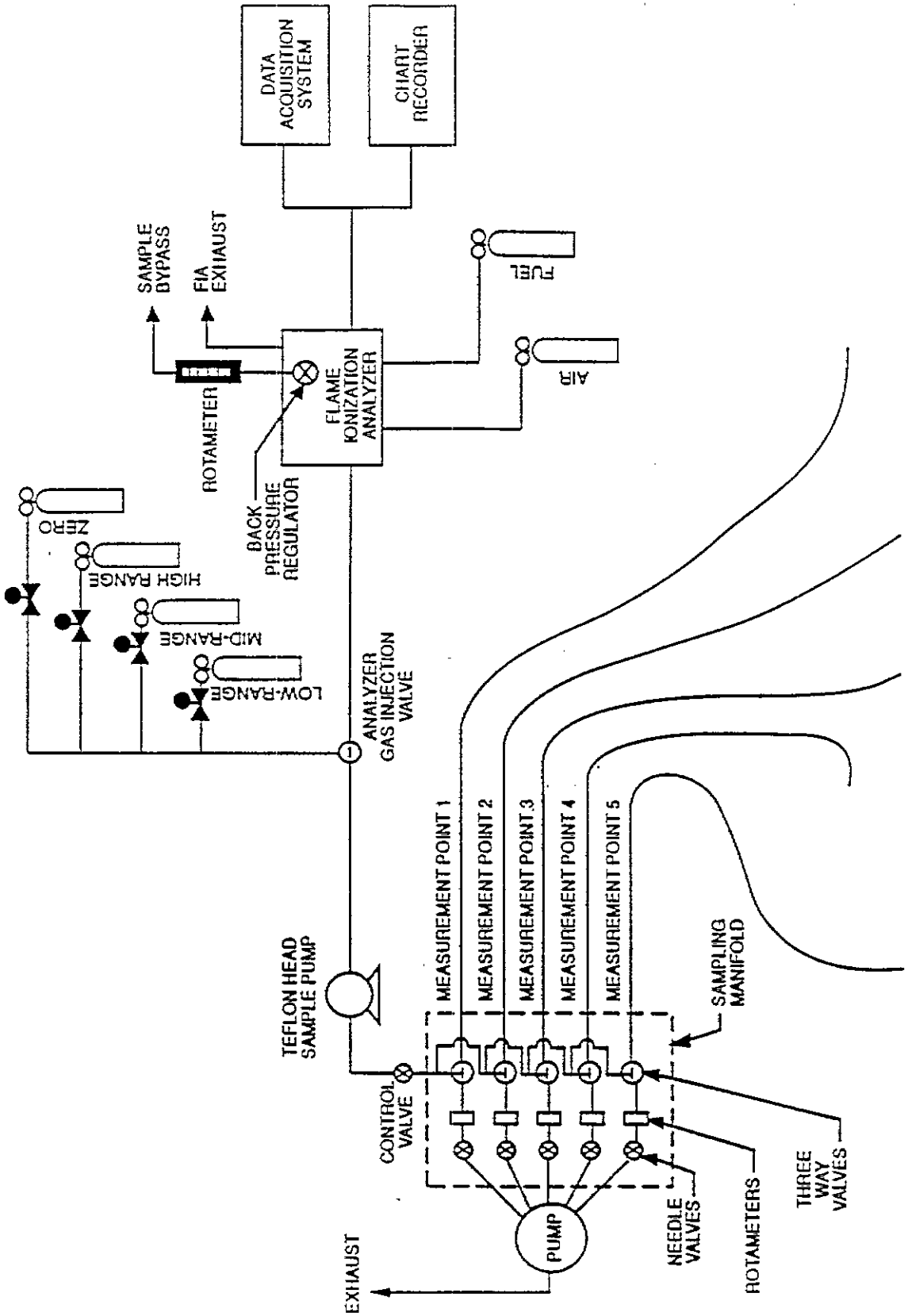


Figure G.1-2 Background measurement system.

analysis system and after a major change is made to the system.

5.2 **Systems Drift Checks.** Select the calibration gas that most closely approximates the concentration of the captured emissions for conducting the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in Section 5.1 is less than 3 percent of the span value. Conduct the system drift checks at the end of each run.

5.3 **System Check.** Inject the high range calibration gas at the inlet of the sampling probe and record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in Section 5.1 for the high range calibration gas. Conduct a system check before and after each test run.

5.4 **Analysis Audit.** Immediately before each test analyze an audit cylinder as described in Section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

A_i = area of NDO i, square feet (ft^2).

A_N = total area of all NDO's in the enclosure, ft^2.

C_{Bi} = corrected average VOC concentration of background emissions at point i, ppm propane.

C_B = average background concentration, ppm propane.

C_{Cj} = corrected average VOC concentration of captured emissions at point j, ppm propane.

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane.

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane.

C_H = actual concentration of the drift check calibration gas, ppm propane.

C_i = uncorrected average background VOC concentration measured at point i, ppm propane.

C_j = uncorrected average VOC concentration measured at point j, ppm propane.

G = total VOC content of captured emissions, kilograms (kg).

K_1 = 1.830×10^{-6} kilograms per cubic meter - parts per million (kg/[m^3-ppm]).

n = number of measurement points.

Q_{Cj} = average effluent volumetric flow rate corrected to standard

conditions at captured emissions point j, cubic meters per minute (m^3/min).

θ_C = total duration of captured emissions sampling run, min.

7. CALCULATIONS

7.1 Total VOC Captured Emissions.

$$G = \sum_{j=1}^{n} (C_{Gj} - C_B) Q_{Gj} \theta_C K_1$$

7.2 VOC Concentration of the Captured Emissions at Point j.

$$C_{Gj} = (C_j - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}}$$

7.3 Background VOC Concentration at Point i.

$$C_{Bi} = (C_i - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}}$$

7.4 Average Background Concentration.

$$C_B = \frac{\left(\sum_{i=1}^{n} C_{Bi} A_i \right)}{A_N}$$

NOTE: If the concentration at each point is within 20 percent of the average concentration of all points, the simple average concentration may be used:

$$C_B = \frac{\sum_{i=1}^{n} C_{Bi}}{n}$$

Procedure G.2 - Captured VOC Emissions (Dilution Technique)

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the volatile organic compounds (VOC) content of captured gas streams. It is intended to be used as a segment in the development of a gas/gas protocol in which fugitive emissions are measured for determining VOC capture efficiency (CE) for surface coating and printing operations. A dilution system is used to reduce the VOC concentration of the captured emission to about the same concentration as the fugitive emissions. The procedure may not be acceptable in certain site-specific situations, e.g., when: (1) direct-fired heaters or other circumstances affect the quantity of VOC at the control device inlet and (2) particulate organic aerosols are formed in the process and are present in the captured emissions.

1.2 Principle. The amount of VOC captured (G) is calculated as the sum of the products of the VOC content (C_{Gj}), the flow rate (Q_{Gj}), and the sampling time (θ_C) from each captured emissions point.

1.3 Estimated Measurement Uncertainty. The measurement uncertainties are estimated for each captured or fugitive emissions point as follows: Q_{Gj} = ±5.5 percent and C_{Gj} = ±5 percent. Based on these numbers, the probable uncertainty for G is estimated at about ±7.4 percent.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours (hr), unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, parts per million [ppm]) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Gas VOC Concentration. A schematic of the measurement system is shown in Figure G.2-1. The main components are described below:

2.1.1 Dilution System. A Kipp in-stack dilution probe and controller or similar device may be used. The dilution rate may be changed by substituting different critical orifices or adjustments of the aspirator supply pressure. The dilution system shall be heated to prevent VOC condensation. **Note:** An out-of-stack dilution device may be used.

2.1.2 Calibration Valve Assembly. Three-way valve assembly at the outlet of sample probe to direct the zero and calibration gases to the analyzer. Other methods, such as quick-connect lines, to route calibration gases to the outlet of the sample probe are acceptable.

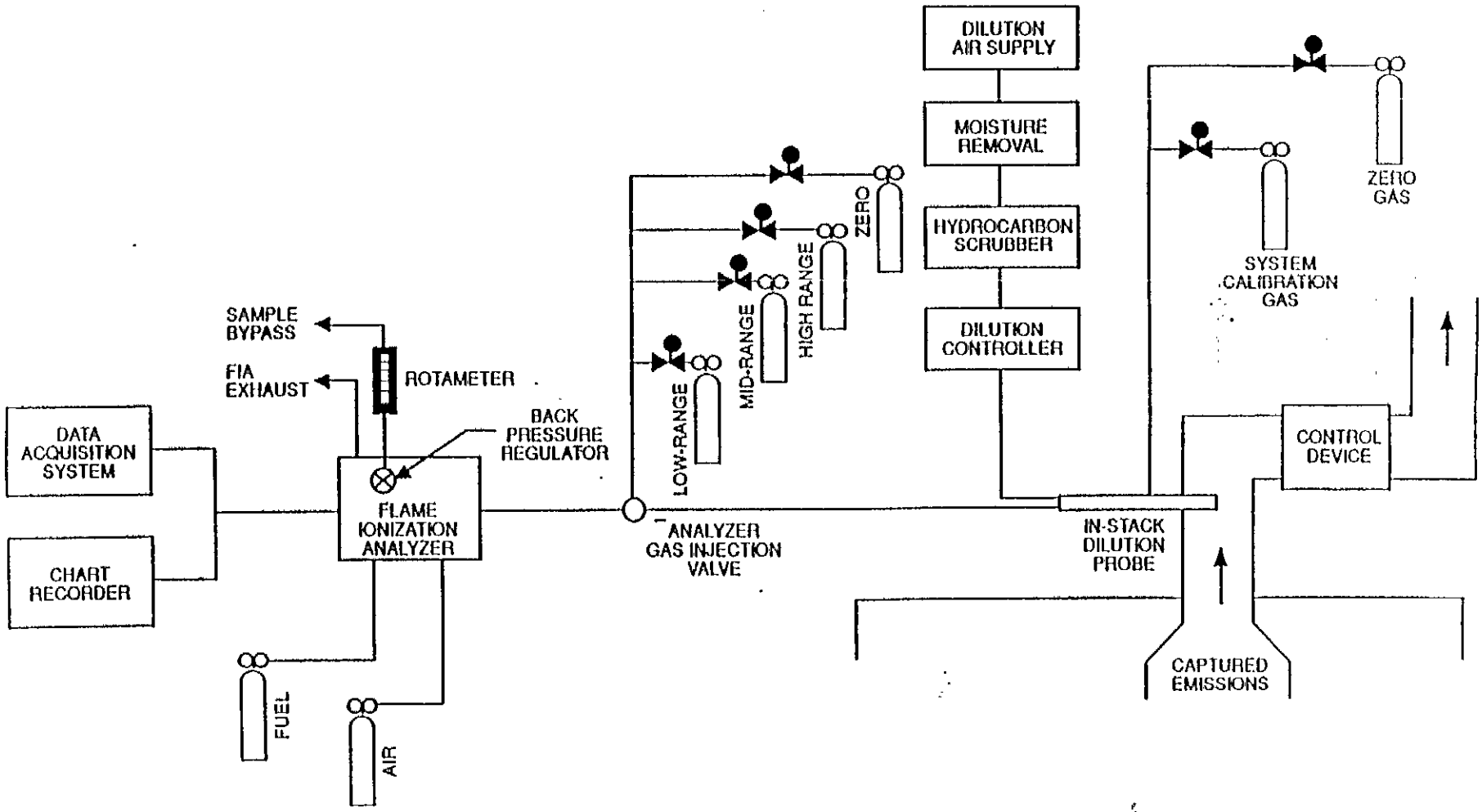


Figure G.2-1 Captured emissions measurement system.

2.1.3 **Sample Line.** Stainless steel or Teflon tubing to transport the sample gas to the analyzer. The sample line must be heated to prevent condensation.

2.1.4 **Sample Pump.** A leak-free pump to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The components of the pump that contact the gas stream shall be constructed of stainless steel or Teflon. The sample pump must be heated to prevent condensation.

2.1.5 **Sample Flow Rate Control.** A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. The flow control valve and rotameter must be heated to prevent condensation. A control valve may also be located on the sample pump bypass loop to assist in controlling the sample pressure and flow rate.

2.1.6 **Sample Gas Manifold.** Capable of diverting a portion of the sample gas stream to the flame ionization analyzer (FIA) and the remainder to the bypass discharge vent. The manifold components shall be constructed of stainless steel or Teflon. If captured or fugitive emissions are to be measured at multiple locations, the measurement system shall be designed to use separate sampling probes, lines, and pumps for each measurement location and a common sample gas manifold and FIA. The sample gas manifold and connecting lines to the FIA must be heated to prevent condensation.

2.1.7 **Organic Concentration Analyzer.** An FIA with a span value of 1.5 times the expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.1.7.1 **Zero Drift.** Less than ±3.0 percent of the span value.

2.1.7.2 **Calibration Drift.** Less than ±3.0 percent of the span value.

2.1.7.3 **Calibration Error.** Less than ±5.0 percent of the calibration gas value.

2.1.7.4 **Response Time.** Less than 30 seconds (sec).

2.1.8 **Integrator/Data Acquisition System.** An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 sec. The device shall be capable of recording average values at least once per min.

2.1.9 **Calibration and Other Gases.** Gases used for calibration, fuel, and combustion air (if required) are contained in compressed gas cylinders. All calibration gases shall be traceable to National Institute of Standards and Testing (NIST) standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.1.9.1 Fuel. A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas

mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.1.9.2 Carrier Gas and Dilution Air Supply. High-purity air with less than 1 ppm of organic material (as propane or carbon equivalent) or less than 0.1 percent of the span value, whichever is greater.

2.1.9.3 FIA Linearity Calibration Gases. Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.1.9.4 Dilution Check Gas. Gas mixture standard containing propane in air, approximately half the span value after dilution.

2.1.10 Particulate Filter. An in-stack or an out-of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out-of-stack filter must be heated to prevent any condensation unless it can be demonstrated that no condensation occurs.

2.2 Captured Emissions Volumetric Flow Rate.

2.2.1 Method 2 or 2A Apparatus. For determining volumetric flow rate.

2.2.2 Method 3 Apparatus and Reagents. For determining molecular weight of the gas stream. An estimate of the molecular weight of the gas stream may be used if it can be justified.

2.2.3 Method 4 Apparatus and Reagents. For determining moisture content, if necessary.

3. DETERMINATION OF VOLUMETRIC FLOW RATE OF CAPTURED EMISSIONS

3.1 Locate all points where emissions are captured from the affected facility. Using Method 1, determine the sampling points. Be sure to check each site for cyclonic or swirling flow.

3.2 Measure the velocity at each sampling site at least once every hour during each sampling run using Method 2 or 2A.

4. DETERMINATION OF VOC CONTENT OF CAPTURED EMISSIONS

4.1 Analysis Duration. Measure the VOC responses at each captured emissions point during the entire test run or, if applicable, while the process is operating. If there are a multiple captured emissions locations, design a sampling system to allow a single FIA to be used to determine the VOC responses at all sampling locations.

4.2 Gas VOC Concentration.

4.2.1 Assemble the sample train as shown in Figure G.2-1. Calibrate the FIA according to the procedure in Section 5.1.

4.2.2 Set the dilution ratio and determine the dilution factor according to the procedure in Section 5.3.

4.2.3 Conduct a system check according to the procedure in Section 5.4.
4.2.4 Install the sample probe so that the probe is centrally located in the stack, pipe, or duct and is sealed tightly at the stack port connection.
4.2.5 Inject zero gas at the calibration valve assembly. Measure the system response time as the time required for the system to reach the effluent concentration after the calibration valve has been returned to the effluent sampling position.
4.2.6 Conduct a system check before and a system drift check after each sampling run according to the procedures in Sections 5.2 and 5.4. If the drift check following a run indicates unacceptable performance, the run is not valid. The tester may elect to perform system drift checks during the run not to exceed one drift check per hour.
4.2.7 Verify that the sample lines, filter, and pump temperatures are 120 ± 5°C.
4.2.8 Begin sampling at the start of the test period and continue to sample during the entire run. Record the starting and ending times and any required process information as appropriate. If multiple captured emission locations are sampled using a single FIA, sample at each location for the same amount of time (e.g., 2 min) and continue to switch from one location to another for the entire test run. Be sure that total sampling time at each location is the same at the end of the test run. Collect at least four separate measurements from each sample point during each hour of testing. Disregard the measurements at each sampling location until two times the response time of the measurement system has elapsed. Continue sampling for at least 1 min and record the concentration measurements.
4.3 **Background Concentration.**
4.3.1 Locate all NDO's of the TTE. A sampling point shall be centrally located outside of the TTE at four equivalent diameters from each NDO, if possible. If there are more than six NDO's, choose six sampling points evenly spaced among the NDO's.
4.3.2 Assemble the sample train as shown in Figure G.2-2. Calibrate the FIA and conduct a system check according to the procedures in Sections 5.1 and 5.4.
4.3.3 Position the probe at the sampling location.
4.3.4 Determine the response time, conduct the system check and sample according to the procedures described in Sections 4.2.4 to 4.2.8.
4.4 **Alternative Procedure.** The direct interface sampling and analysis procedure described in Section 7.2 of Method 18 may be used to determine the gas VOC concentration. The system must be designed to collect and analyze at least one sample every 10 min.

5. CALIBRATION AND QUALITY ASSURANCE
5.1 **FIA Calibration and Linearity Check.** Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system after the dilution system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero-

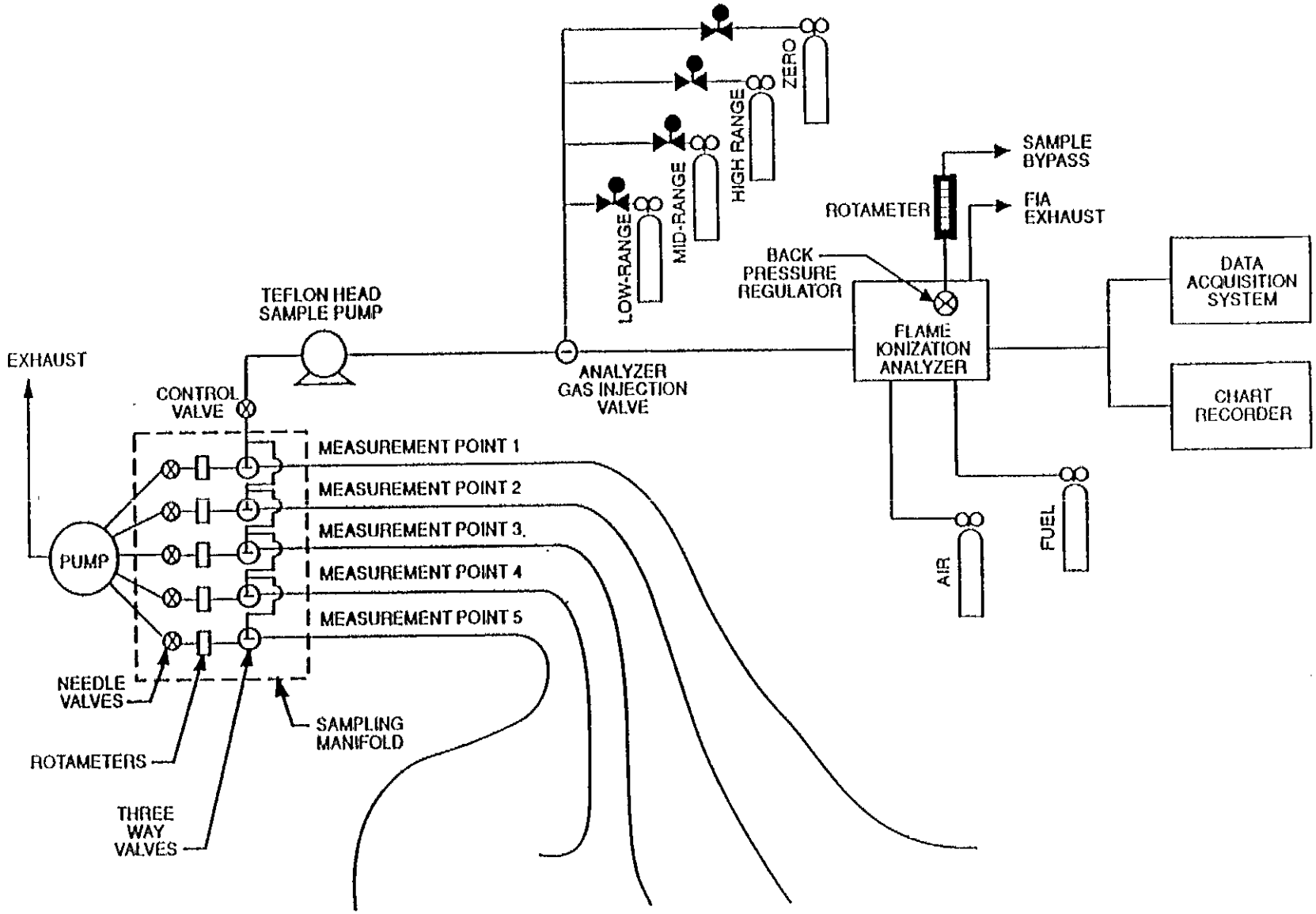


Figure G.2-2 Background measurement system.

and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 **Systems Drift Checks.** Select the calibration gas that most closely approximates the concentration of the diluted captured emissions for conducting the drift checks. Introduce the zero and calibration gas at the calibration valve assembly and verify that the appropriate gas flow rate and pressure are present at the FIA. Record the measurement system responses to the zero and calibration gases. The performance of the system is acceptable if the difference between the drift check measurement and the value obtained in Section 5.1 is less than 3 percent of the span value. Conduct the system drift check at the end of each run.

5.3 **Determination of Dilution Factor.** Inject the dilution check gas into the measurement system before the dilution system and record the response. Calculate the dilution factor using Equation 3.

5.4 **System Check.** Inject the high-range calibration gas at the inlet to the sampling probe while the dilution air is turned off. Record the response. The performance of the system is acceptable if the measurement system response is within 5 percent of the value obtained in Section 5.1 for the high range calibration gas. Conduct a system check before and after each test run.

5.5 **Analysis Audit.** Immediately before each test, analyze an audit cylinder as described in Section 5.2. The analysis audit must agree with the audit cylinder concentration within 10 percent.

6. NOMENCLATURE

A_i = area of NDO i, square feet (ft^2).

A_N = total area of all NDO's in the enclosure, ft^2.

C_A = actual concentration of the dilution check gas, ppm propane.

C_{Bi} = corrected average VOC concentration of background emissions at point i, ppm propane.

C_B = average background concentration, ppm propane.

C_{DH} = average measured concentration for the drift check calibration gas, ppm propane.

C_{DO} = average system drift check concentration for zero concentration gas, ppm propane.

C_H = actual concentration of the drift check calibration gas, ppm propane.

C_i = uncorrected average background VOC concentration measured at point

i, ppm propane.

C_j = uncorrected average VOC concentration measured at point j, ppm propane.

C_M = measured concentration of the dilution check gas, ppm propane.

DF = dilution factor.

G = total VOC content of captured emissions, kilograms (kg).

K_1 = 1.830×10^{-6} kilograms per cubic meter - parts per million (kg/[m^3-ppm]).

n = number of measurement points.

Q_{Gj} = average effluent volumetric flow rate corrected to standard conditions at captured emissions point j, cubic meters per minute (m^3/min).

θ_C = total duration of capture efficiency sampling run, min.

7. CALCULATIONS

7.1 Total VOC Captured Emissions.

$$G = \sum_{j=1}^{n} C_{Gj} Q_{Gj} \theta_C K_1$$

7.2 VOC Concentration of the Captured Emissions at Point j.

$$C_{Gj} = DF (C_j - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}}$$

7.3 Dilution Factor.

$$DF = \frac{C_A}{C_M}$$

7.4 Background VOC Concentration at Point i.

$$C_{Bi} = (C_i - C_{DO}) \frac{C_H}{C_{DH} - C_{DO}}$$

7.5 Average Background Concentration.

$$C_B = \frac{\sum_{i=1}^{n} C_{Bi} A_i}{A_N}$$

NOTE: If the concentration at each point is within 20 percent of the average concentration of all points, the simple average concentration may be used:

$$C_B = \frac{\sum_{i=1}^{n} C_{Bi}}{n}$$

Procedure L - VOC Input

1. INTRODUCTION

1.1 Applicability. This procedure is applicable for determining the input of volatile organic compounds (VOC). It is intended to be used as a segment in the development of liquid/gas protocols for determining VOC capture efficiency (CE) for surface coating and printing operations.

1.2 Principle. The amount of VOC introduced to the process (L) is the sum of the products of the weight (W) of each VOC containing liquid (ink, paint, solvent, etc.) used and its VOC content (V). A sample of each VOC containing liquid is analyzed with a flame ionization analyzer (FIA) to determine V.

1.3 Estimated Measurement Uncertainty. The measurement uncertainties are estimated for each VOC containing liquid as follows: W = ±2.0 percent and V = ±12.0 percent. Based on these numbers, the probable uncertainty for L is estimated at about ±12.2 percent for each VOC containing liquid.

1.4 Sampling Requirements. A capture efficiency test shall consist of at least three sampling runs. The sampling time for each run should be at least 8 hours, unless otherwise approved.

1.5 Notes. Because this procedure is often applied in highly explosive areas, caution and care should be exercised in choosing appropriate equipment and installing and using the equipment. Mention of trade names or company products does not constitute endorsement. All gas concentrations (percent, parts per million [ppm]) are by volume, unless otherwise noted.

2. APPARATUS AND REAGENTS

2.1 Liquid Weight.

2.1.1 Balances/Digital Scales. To weigh drums of VOC containing liquids to within 0.2 pound (lb).

2.1.2 Volume Measurement Apparatus (Alternative). Volume meters, flow meters, density measurement equipment, etc., as needed to achieve same accuracy as direct weight measurements.

2.2 VOC Content (Flame Ionization Analyzer Technique). The liquid sample analysis system is shown in Figures L-1 and L-2. The following equipment is required:

2.2.1 Sample Collection Can. An appropriately sized metal can to be used to collect VOC containing materials. The can must be constructed in such a way that it can be grounded to the coating container.

2.2.2 Needle Valves. To control gas flow.

2.2.3 Regulators. For carrier gas and calibration gas cylinders.

2.2.4 Tubing. Teflon or stainless steel tubing with diameters and lengths determined by connection requirements of equipment. The tubing between the sample oven outlet and the FIA shall be heated to maintain a temperature of 120 ± 5°C.

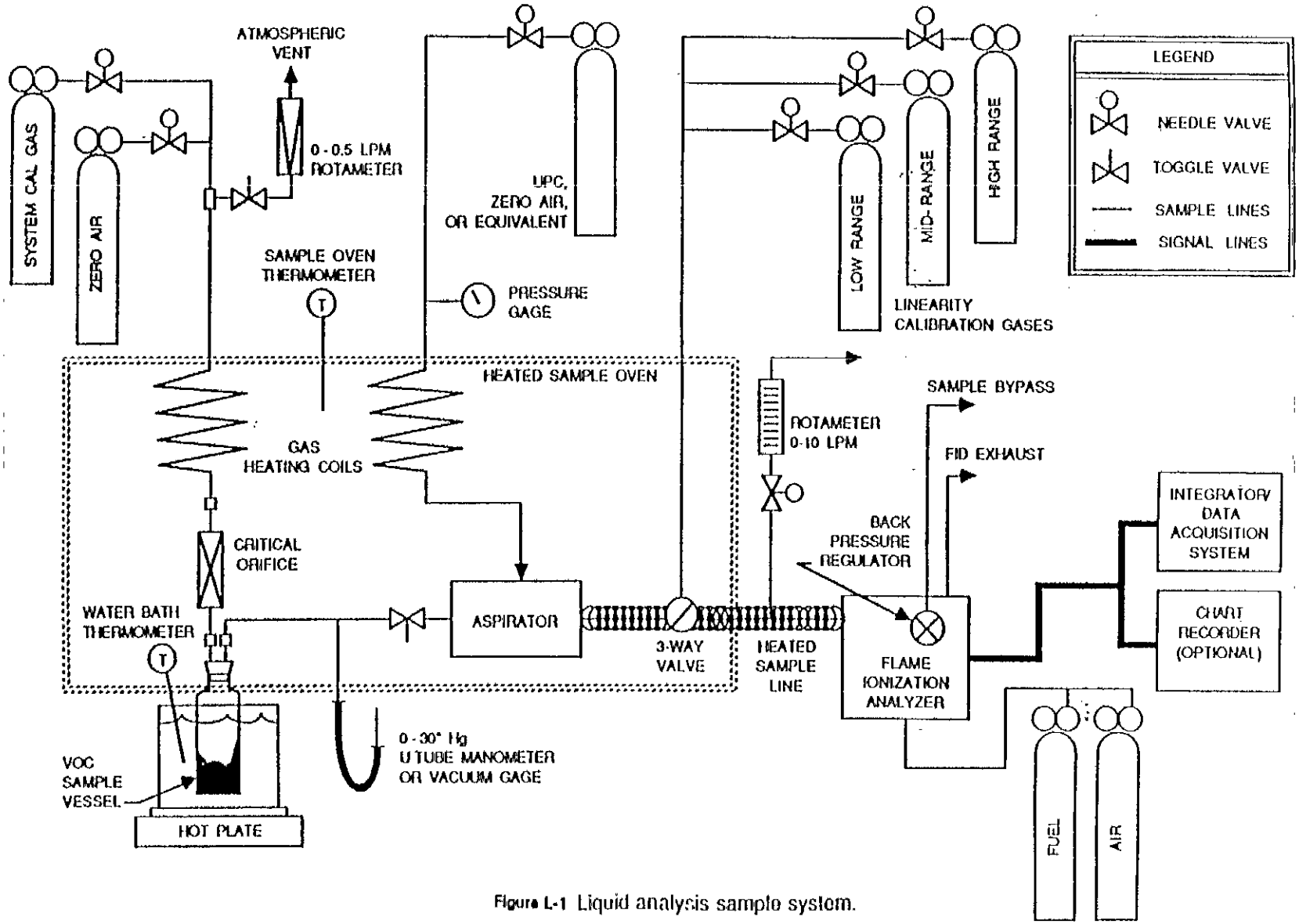


Figure L-1 Liquid analysis sample system.

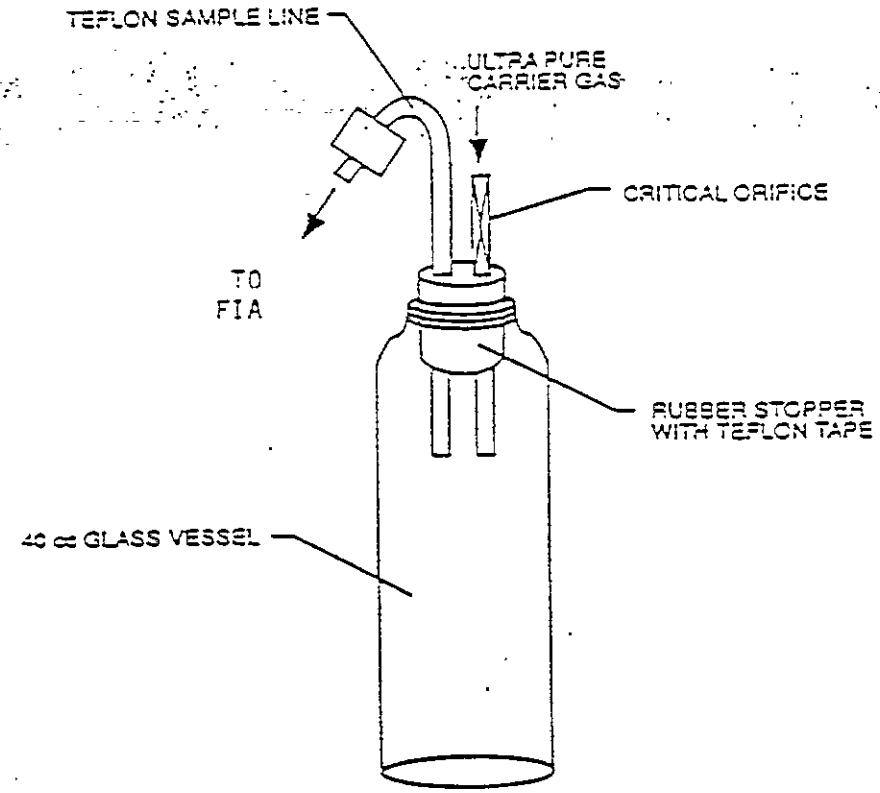


Figure L-2 VOC sampling vessel.

2.2.5 **Atmospheric Vent.** A tee and 0- to 0.5-liters per minute (L/min) rotameter placed in the sampling line between the carrier gas cylinder and the VOC sample vessel to release the excess carrier gas. A toggle valve placed between the tee and the rotameter facilitates leak tests of the analysis system.

2.2.6 **Thermometer.** Capable of measuring the temperature of the hot water bath to within 1°C.

2.2.7 **Sample Oven.** Heated enclosure, containing calibration gas coil heaters, critical orifice, aspirator, and other liquid sample analysis components, capable of maintaining a temperature of 120 ± 5°C.

2.2.8 **Gas Coil Heaters.** Sufficient lengths of stainless steel or Teflon tubing to allow zero and calibration gases to be heated to the sample oven temperature before entering the critical orifice or aspirator.

2.2.9 **Water Bath.** Capable of heating and maintaining a sample vessel temperature of 100 ± 5°C.

2.2.10 **Analytical Balance.** To measure ±0.001 g.

2.2.11 **Disposable Syringes.** 2 cubic centimeters (cc) or 5 cc.

2.2.12 **Sample Vessel.** Glass, 40-ml septum vial. A separate vessel is needed for each sample.

2.2.13 **Rubber Stopper.** Two-hole stopper to accommodate 3.2 millimeters (mm) (0.125 inches [in]) Teflon tubing, appropriately sized to fit the opening of the sample vessel. The rubber stopper should be wrapped in Teflon tape to provide a tighter seal and to prevent any reaction of the sample with the rubber stopper. Alternatively, any leak-free closure fabricated of nonreactive materials and accommodating the necessary tubing fittings may be used.

2.2.14 **Critical Orifices.** Calibrated critical orifices capable of providing constant flow rates from 50 to 250 milliliters per minute (mL/min) at known pressure drops. Sapphire orifice assemblies (available from O'Keefe Controls Company) and glass capillary tubing have been found to be adequate for this application.

2.2.15 **Vacuum Gauge.** 0- to 760-millimeters of Mercury (mm Hg) (0- to 30-inches of Mercury [in Hg) U-Tube manometer or vacuum gauge.

2.2.16 **Pressure Gauge.** Bourdon gauge capable of measuring the maximum air pressure at the aspirator inlet (e.g., 690 kiloPascals [kPa], 100 pounds per square inch gauge [psig]).

2.2.17 **Aspirator.** A device capable of generating sufficient vacuum at the sample vessel to create critical flow through the calibrated orifice when sufficient air pressure is present at the aspirator inlet. The aspirator must also provide sufficient sample pressure to operate the FIA. The sample is also mixed with the dilution gas within the aspirator.

2.2.18 **Soap Bubble Meter.** Of an appropriate size to calibrate the critical orifices in the system.

2.2.19 **Organic Concentration Analyzer.** An FIA with a span value of 1.5 times the

expected concentration as propane; however, other span values may be used if it can be demonstrated that they would provide more accurate measurements. The system shall be capable of meeting or exceeding the following specifications:

2.2.19.1 **Zero Drift.** Less than ±3.0 percent of the span value.

2.2.19.2 **Calibration Drift.** Less than ±3.0 percent of span value.

2.2.19.3 **Calibration Error.** Less than ±5.0 percent of the calibration gas value.

2.2.20 **Integrator/Data Acquisition System.** An analog or digital device or computerized data acquisition system used to integrate the FIA response or compute the average response and record measurement data. The minimum data sampling frequency for computing average or integrated values is one measurement value every 5 seconds (sec). The device shall be capable of recording average values at least once per minute (min).

2.2.21 **Chart Recorder (Optional).** A chart recorder or similar device is recommended to provide a continuous analog display of the measurement results during the liquid sample analysis.

2.2.22 **Calibration and Other Gases.** For calibration, fuel, and combustion air (if required) contained in compressed gas cylinders. All calibration gases shall be traceable to National Institute of Standards and Testing (NIST) standards and shall be certified by the manufacturer to ±1 percent of the tag value. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than ±2 percent from the certified value. For calibration gas values not generally available, alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval.

2.2.22.1 **Fuel.** A 40 percent H_2/60 percent He or 40 percent H_2/60 percent N_2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

2.2.22.2 **Carrier Gas.** High purity air with less than 1 ppm of organic material (as propane) or less than 0.1 percent of the span value, whichever is greater.

2.2.22.3 **FIA Linearity Calibration Gases.** Low-, mid-, and high-range gas mixture standards with nominal propane concentrations of 20-30, 45-55, and 70-80 percent of the span value in air, respectively. Other calibration values and other span values may be used if it can be shown that more accurate measurements would be achieved.

2.2.22.4 **System Calibration Gas.** Gas mixture standard containing propane in air, approximating the undiluted VOC concentration expected for the liquid samples.

3. DETERMINATION OF LIQUID INPUT WEIGHT

3.1 **Weight Difference.** Determine the amount of material introduced to the process as the weight difference of the feed material before and after each sampling run. In determining the total VOC containing liquid usage, account for: (a) the initial (beginning) VOC containing liquid mixture; (b) any solvent added during the test run;

(c) any coating added during the test run; and (d) any residual VOC containing liquid mixture remaining at the end of the sample run.

3.1.1 Identify all points where VOC-containing liquids are introduced to the process. To obtain an accurate measurement of VOC-containing liquids, start with an empty fountain (if applicable). After completing the run, drain the liquid in the fountain back into the liquid drum (if possible), and weigh the drum again. Weigh the VOC-containing liquids to ±0.5 percent of the total weight (full) or ±0.1 percent of the total weight of VOC-containing liquid used during the sample run, whichever is less. If the residual liquid cannot be returned to the drum, drain the fountain into a pre-weighed empty drum to determine the final weight of the liquid.

3.1.2 If it is not possible to measure a single representative mixture, then weigh the various components separately (e.g., if solvent is added during the sampling run, weigh the solvent before it is added to the mixture). If a fresh drum of VOC containing liquid is needed during the run, then weigh both the empty drum and fresh drum.

3.2 Volume Measurement (Alternative). If direct-weight measurements are not feasible, the tester may use volume meters and flow rate meters (and density measurements) to determine the weight of liquids used if it can be demonstrated that the technique produces results equivalent to the direct- weight measurements. If a single representative mixture cannot be measured, measure the components separately.

4. DETERMINATION OF VOC CONTENT IN INPUT LIQUIDS

4.1 Collection of Liquid Samples.

4.1.1 Collect a 100-mL or larger sample of the VOC-containing liquid mixture at each application location at the beginning and end of each test run. A separate sample should be taken of each VOC containing liquid added to the application mixture during the test run. If a fresh drum is needed during the sampling run, then obtain a sample from the fresh drum.

4.1.2 When collecting the sample, ground the sample container to the coating drum. Fill the sample container as close to the rim as possible to minimize the amount of headspace.

4.1.3 After the sample is collected, seal the container so the sample cannot leak out or evaporate.

4.1.4 Label the container to identify clearly the contents.

4.2 Liquid Sample VOC Content.

4.2.1 Assemble the liquid VOC content analysis system as shown in Figure L-1.

4.2.2 Permanently identify all of the critical orifices that may be used. Calibrate each critical orifice under the expected operating conditions (i.e., sample vacuum and temperature) against a volume meter as described in Section 5.3.

4.2.3 Label and tare the sample vessels (including the stoppers and caps) and the

syringes.

4.2.4 Install an empty sample vessel and perform a leak test of the system. Close the carrier gas valve and atmospheric vent and evacuate the sample vessel to 250 mm Hg (10 in Hg) absolute or less using the aspirator. Close the toggle valve at the inlet to the aspirator and observe the vacuum for at least one minute. If there is any change in the sample pressure, release the vacuum, adjust or repair the apparatus as necessary, and repeat the leak test.

4.2.5 Perform the analyzer calibration and linearity checks according to the procedure in Section 5.1. Record the responses to each of the calibration gases and the back-pressure setting of the FIA.

4.2.6 Establish the appropriate dilution ratio by adjusting the aspirator air supply or substituting critical orifices. Operate the aspirator at a vacuum of at least 25 mm Hg (1 in Hg) greater than the vacuum necessary to achieve critical flow. Select the dilution ratio so that the maximum response of the FIA to the sample does not exceed the high-range calibration gas.

4.2.7 Perform system calibration checks at two levels by introducing compressed gases at the inlet to the sample vessel while the aspirator and dilution devices are operating. Perform these checks using the carrier gas (zero concentration) and the system calibration gas. If the response to the carrier gas exceeds ±0.5 percent of span, clean or repair the apparatus and repeat the check. Adjust the dilution ratio as necessary to achieve the correct response to the upscale check, but do not adjust the analyzer calibration. Record the identification of the orifice, aspirator air supply pressure, FIA back-pressure, and the responses of the FIA to the carrier and system calibration gases.

4.2.8 After completing the above checks, inject the system calibration gas for approximately 10 min. Time the exact duration of the gas injection using a stopwatch. Determine the area under the FIA response curve and calculate the system response factor based on the sample gas flow rate, gas concentration, and the duration of the injection as compared to the integrated response using Equations 2 and 3.

4.2.9 Verify that the sample oven and sample line temperatures are 120 ± 5°C and that the water bath temperature is 100° ± 5°C.

4.2.10 Fill a tared syringe with approximately 1 gram (g) of the VOC-containing liquid and weigh it. Transfer the liquid to a tared sample vessel. Plug the sample vessel to minimize sample loss. Weigh the sample vessel containing the liquid to determine the amount of sample actually received. Also, as a quality control check, weigh the empty syringe to determine the amount of material delivered. The two coating sample weights should agree within ±0.02 g. If not, repeat the procedure until an acceptable sample is obtained.

4.2.11 Connect the vessel to the analysis system. Adjust the aspirator supply pressure to the correct value. Open the valve on the carrier gas supply to the sample vessel and adjust it to provide a slight excess flow to the atmospheric vent. As soon

as the initial response of the FIA begins to decrease, immerse the sample vessel in the water bath. (Applying heat to the sample vessel too soon may cause the FIA response to exceed the calibrated range of the instrument, and thus invalidate the analysis.)

4.2.12 Continuously measure and record the response of the FIA until all of the volatile material has been evaporated from the sample and the instrument response has returned to the baseline (i.e., response less than 0.5 percent of the span value). Observe the aspirator supply pressure, FIA back-pressure, atmospheric vent, and other system operating parameters during the run; repeat the analysis procedure if any of these parameters deviate from the values established during the system calibration checks in Section 4.2.7. After each sample perform the drift check described in Section 5.2. If the drift check results are acceptable, calculate the VOC content of the sample using the equations in Section 7. Integrate the area under the FIA response curve, or determine the average concentration response and the duration of sample analysis.

5. CALIBRATION AND QUALITY ASSURANCE

5.1 FIA Calibration and Linearity Check. Make necessary adjustments to the air and fuel supplies for the FIA and ignite the burner. Allow the FIA to warm up for the period recommended by the manufacturer. Inject a calibration gas into the measurement system and adjust the back-pressure regulator to the value required to achieve the flow rates specified by the manufacturer. Inject the zero- and the high-range calibration gases and adjust the analyzer calibration to provide the proper responses. Inject the low- and mid-range gases and record the responses of the measurement system. The calibration and linearity of the system are acceptable if the responses for all four gases are within 5 percent of the respective gas values. If the performance of the system is not acceptable, repair or adjust the system and repeat the linearity check. Conduct a calibration and linearity check after assembling the analysis system and after a major change is made to the system.

5.2 Systems Drift Checks. After each sample, repeat the system calibration checks in Section 4.2.7 before any adjustments to the FIA or measurement system are made. If the zero or calibration drift exceeds ±3 percent of the span value, discard the result and repeat the analysis.

5.3 Critical Orifice Calibration.

5.3.1 Each critical orifice must be calibrated at the specific operating conditions that it will be used. Therefore, assemble all components of the liquid sample analysis system as shown in Figure L-3. A stopwatch is also required.

5.3.2 Turn on the sample oven, sample line, and water bath heaters and allow the system to reach the proper operating temperature. Adjust the aspirator to a vacuum of 380 mm Hg (15 in Hg). Measure the time required for one soap bubble to move a known distance and record barometric pressure.

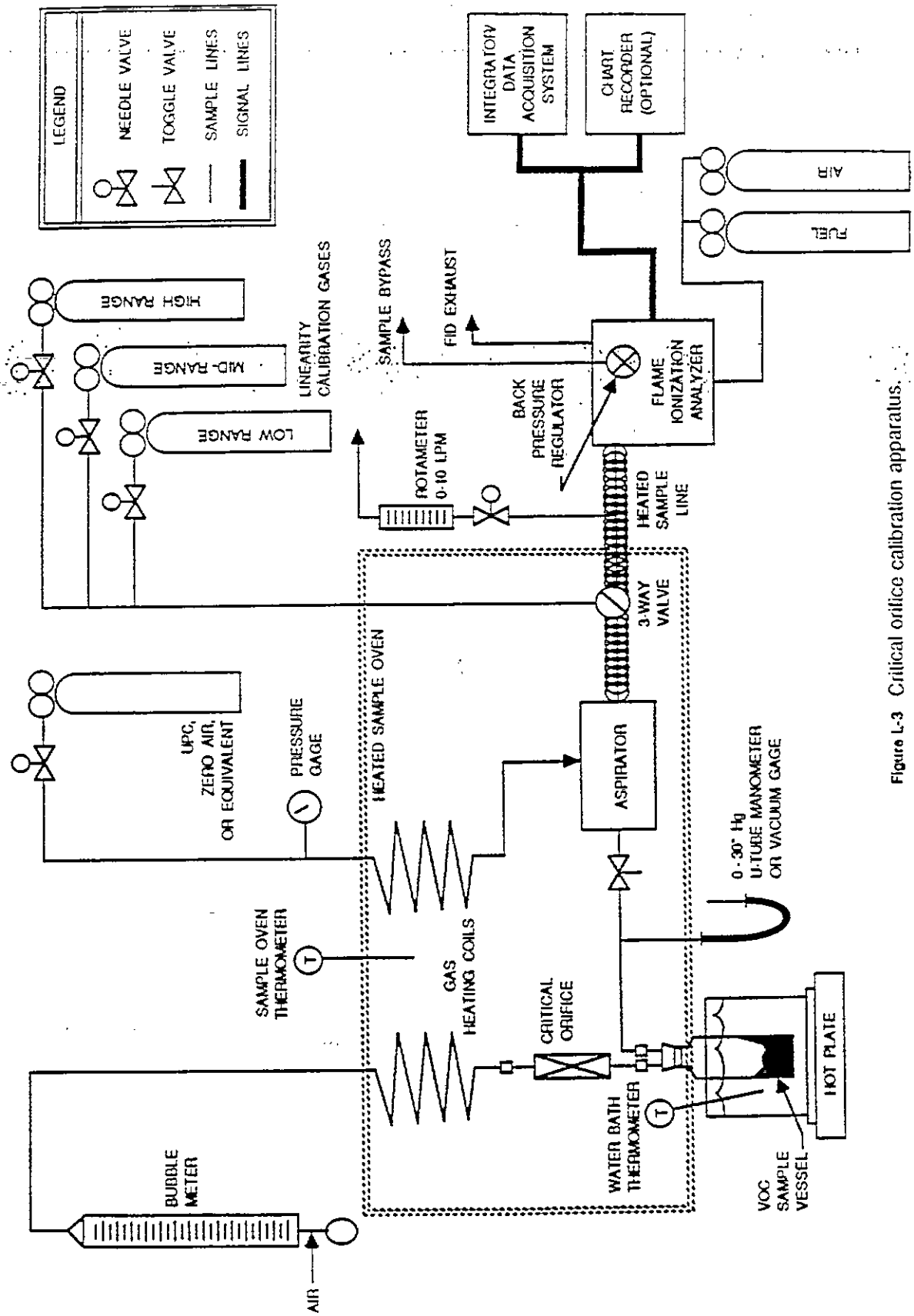


Figure L-3 Critical orifice calibration apparatus.

5.3.3 Repeat the calibration procedure at a vacuum of 406 mm Hg (16 in Hg) and at 25-mm Hg (1-in Hg) intervals until three consecutive determinations provide the same flow rate. Calculate the critical flow rate for the orifice in mL/min at standard conditions. Record the vacuum necessary to achieve critical flow.

6. NOMENCLATURE

A_L = area under the response curve of the liquid sample, area count.
A_S = area under the response curve of the calibration gas, area count.
C_S = actual concentration of system calibration gas, ppm propane.
K = 1.830×10^{-9} grams per milliliter - parts per million (g/(mL-ppm).
L = total VOC content of liquid input, kilograms (kg).
M_L = mass of liquid sample delivered to the sample vessel, grams (g).
q = flow rate through critical orifice, milliliters per minute (mL/min).
RF = liquid analysis system response factor, grams per area count.
θ_S = total gas injection time for system calibration gas during integrator calibration, min.
V_{Fj} = final VOC fraction of VOC containing liquid j.
V_{Ij} = initial VOC fraction of VOC containing liquid j.
V_{Aj} = VOC fraction of VOC containing liquid j added during the run.
V = VOC fraction of liquid sample.
W_{Fj} = weight of VOC containing liquid j remaining at end of the run, kg.
W_{Ij} = weight of VOC containing liquid j at beginning of the run, kg.
W_{Aj} = weight of VOC containing liquid j added during the run, kg.

7. CALCULATIONS

7.1 Total VOC Content of the Input VOC Containing Liquid.

$$L = \sum_{j=1}^{n} V_I W_I - \sum_{j=1}^{n} V_{Fj} W_{Fj} + \sum_{j=1}^{n} V_{Aj} W_{Aj}$$

7.2 Liquid Sample Analysis System Response Factor for Systems Using Integrators, Grams/Area Counts.

$$RF = \frac{C_S q \theta_S K}{A_S}$$

7.3 VOC Content of the Liquid Sample.

$$V = \frac{A_L \; R \; F}{M_L}$$

Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure

1. INTRODUCTION

1.1 Applicability. This procedure is used to determine whether a permanent or temporary enclosure meets the criteria of a total enclosure.

1.2 Principle. An enclosure is evaluated against a set of criteria. If the criteria are met and if all the exhaust gases are ducted to a control device, then the volatile organic compounds (VOC's) capture efficiency (CE) is assumed to be 100 percent and CE need not be measured. However, if part of the exhaust gas stream is not ducted to a control device, CE must be determined.

2. DEFINITIONS

2.1 Natural Draft Opening (NDO) -- Any permanent opening in the enclosure that remains open during operation of the facility and is not connected to a duct in which a fan is installed.

2.2 Permanent Total Enclosure (PTE) -- A permanently installed enclosure that completely surrounds a source of emissions such that all VOC emissions are captured and contained for discharge through a control device.

2.3 Temporary Total Enclosure (TTE) -- A temporarily installed enclosure that completely surrounds a source of emissions such that all VOC emissions are captured and contained for discharge through ducts that allow for the accurate measurement of VOC rates.

3. CRITERIA OF A TEMPORARY TOTAL ENCLOSURE

3.1 Any NDO shall be at least 4 equivalent opening diameters from each VOC emitting point.

3.2 Any exhaust point from the enclosure shall be at least 4 equivalent duct or hood diameters from each NDO.

3.3 The total area of all NDO's shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling.

3.4 The average facial velocity (FV) of air through all NDO's shall be at least 3,600 meters per hour (m/hr) (200 feet per minute [fpm]). The direction of air through all NDO's shall be into the enclosure.

3.5 All access doors and windows whose areas are not included in Section 3.3 and are not included in the calculation in Section 3.4 shall be closed during routine operation of the process.

4. CRITERIA OF A PERMANENT TOTAL ENCLOSURE

4.1 Same as Sections 3.1 and 3.3 - 3.5.

4.2 All VOC emissions must be captured and contained for discharge through a control

device.

5. PROCEDURE

5.1 Determine the equivalent diameters of the NDO's and determine the distances from each VOC-emitting point to all NDO's. Determine the equivalent diameter of each exhaust duct or hood and its distance to all NDO's. Calculate the distances in terms of equivalent diameters. The number of equivalent diameters shall be at least four.

5.2 Measure the total area (A_t) of the enclosure and the total area (A_N) of all NDO's of the enclosure. Calculate the NDO to enclosure area ratio (NEAR) as follows:

$$NEAR = \frac{A_N}{A_t}$$

The NEAR must be ≤0.05.

5.3 Measure the volumetric flow rate, corrected to standard conditions, of each gas stream exiting the enclosure through an exhaust duct or hood using EPA Method 2. In some cases (e.g., when the building is the enclosure), it may be necessary to measure the volumetric flow rate, corrected to standard conditions, of each gas stream entering the enclosure through a forced makeup air duct using Method 2. Calculate FV using the following equation:

$$FV = \frac{Q_O - Q_I}{A_N}$$

where:

Q_O = the sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood.

Q_I = the sum of the volumetric flow from all gas streams into the enclosure through a forced makeup air duct; zero, if there is no forced makeup air into the enclosure.

A_N = total area of all NDO's in enclosure.

The FV shall be at least 3,600 m/hr (200 fpm).

5.4 Verify that the direction of air flow through all NDO's is inward. Use streamers, smoke tubes, tracer gases, etc. Strips of plastic wrapping film have been found to be effective. Monitor the direction of air flow at intervals of at least 10 minutes (min) for at least 1 hour (hr).

6. QUALITY ASSURANCE

6.1 The success of this protocol lies in designing the TTE to simulate the conditions

that exist without the TTE; i.e., the effect of the TTE on the normal flow patterns around the affected facility or the amount of fugitive VOC emissions should be minimal. The TTE must enclose the application stations, coating reservoirs, and all areas from the application station to the oven. The oven does not have to be enclosed if it is under negative pressure. The NDO's of the temporary enclosure and a fugitive exhaust fan must be properly sized and placed. 6.2. Estimate the ventilation rate of the TTE that best simulates the conditions that exist without the TTE; i.e., the effect of the TTE on the normal flow patterns around the affected facility or the amount of fugitive VOC emissions should be minimal. Figure T-1 may be used as an aid. Measure the concentration (C_G) and flow rate (Q_G) of the captured gas stream, specify a safe concentration (C_F) for the fugitive gas stream, estimate the CE, and then use the plot in Figure T-1 to determine the volumetric flow rate of the fugitive gas stream (Q_F). A fugitive VOC emission exhaust fan that has a variable flow control is desirable.

6.2.1 Monitor the concentration of VOC into the capture device without the TTE. To minimize the effect of temporal variation on the captured emissions, the baseline measurement should be made over as long a time period as practical. However, the process conditions must be the same for the measurement in Section 6.2.3 as they are for this baseline measurement. This may require short measuring times for this quality control check before and after the construction of the TTE.

6.2.2 After the TTE is constructed, monitor the VOC concentration inside the TTE. This concentration shall not continue to increase and must not exceed the safe level according to US Occupational Safety and Health Administration (OSHA) requirements for permissible exposure limits. An increase in VOC concentration indicates poor TTE design or poor capture efficiency.

6.2.3 Monitor the concentration of VOC into the capture device with the TTE. To limit the effect of the TTE on the process, the VOC concentration with and without the TTE must be within ±10 percent. If the measurements do not agree, adjust the ventilation rate from the TTE until they agree within 10 percent.

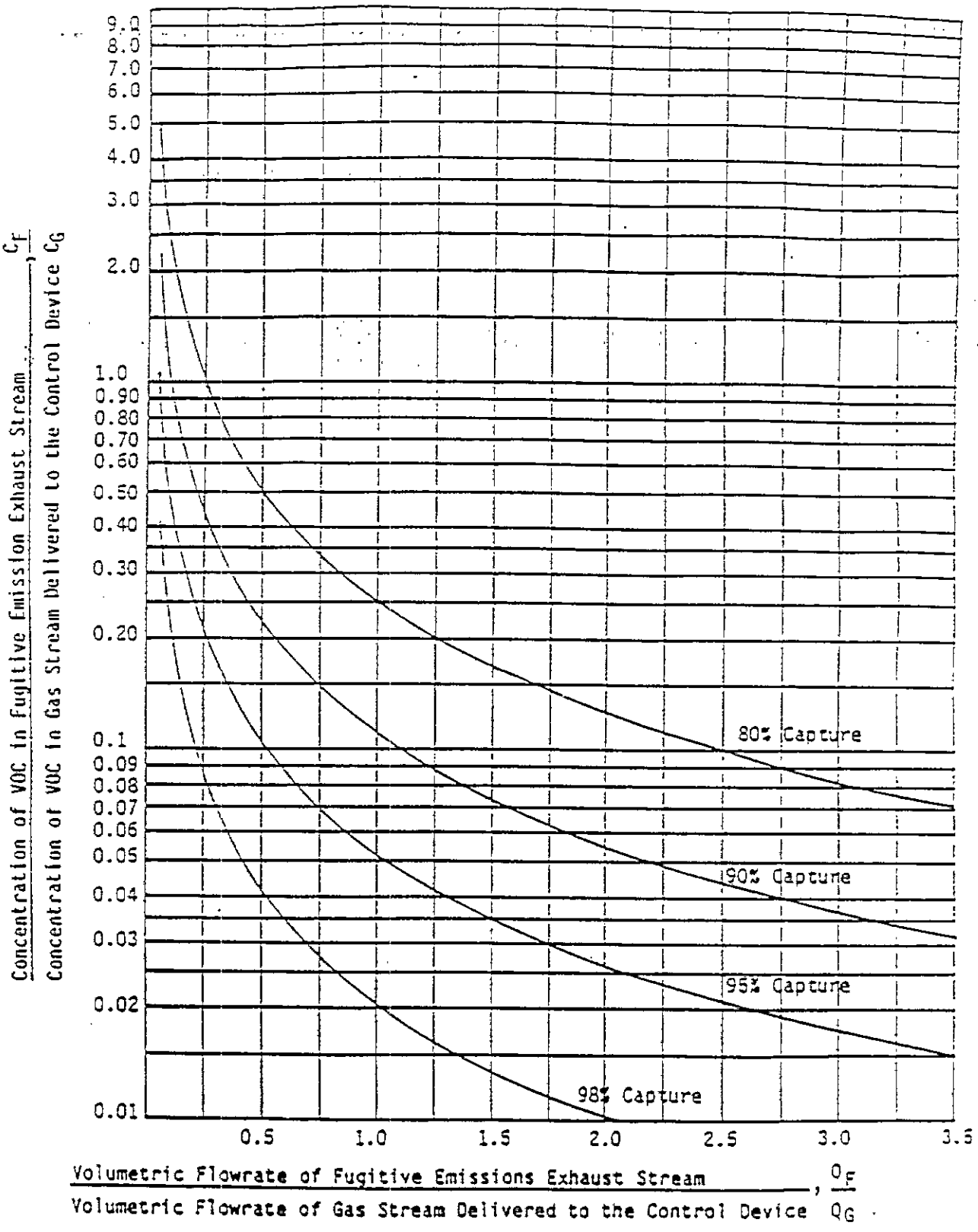
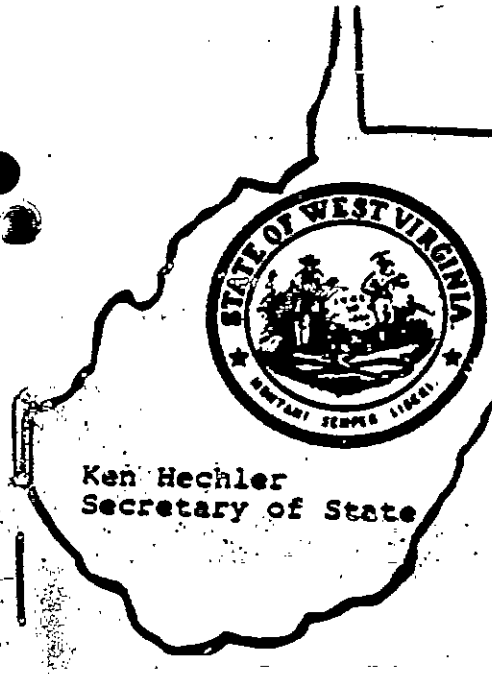


Figure T-1 The Crumpler Chart



WEST VIRGINIA REGISTER

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(61-12A)	plicator Rules & Regs $4.20 Legislative							

RULE MONITOR

AGENCY/SERIES NO.	RULE	NOTICE	HEARING	EMER. RULE	SEC/STATE	LRMRC-ACTION	LEGIS.	FINAL FILE	EFFECTIVE
Agriculture (61-12e)	Assessment of Civil Penalties & Procedures for Consent Agreements or Negotiated Settlement $3.20 Legislative	6/26/91	7/30/91						
Agriculture (61-14)	WV Plant Pest Act Regs $2.80 Legislative	6/26/91	7/29/91						
Agriculture (61-1)	Animal Disease Control** $5.80 Legislative	6/27/91	7/29/91	6/27/91					
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Air Pollution Control Comm. (45-21)	Prevent & Control Air Pollution from the Emmission of VOCs (Repeals & Replaces 21,23,24) $30.00 Legislative	7/15/91	9/12/91						
Alcohol Beverage Control Comm. (175-4)	Retail Sale of Wine in the Grocery Stores, Wine Speciality Shops & Private Wine Restaurants** $6.70 Legislative	7/3/91	8/2/91	Filed 7/3/91					

WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION
Form #1

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FILED
1991 JUL 15 AM 11: 29
OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: WV Air Pollution Control Commission TITLE NUMBER: 45CSR21

RULE TYPE: Legislative ; CITE AUTHORITY Chapter 16, Article 20, Section 5

AMENDMENT TO AN EXISTING RULE: YES___ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 45CSR21

TITLE OF RULE BEING PROPOSED: "Regulations to Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds"

DATE OF PUBLIC HEARING: September 12, 1991 TIME: 9:00 a.m.

LOCATION OF PUBLIC HEARING: Conference Room
WV Air Pollution Control Commission
1558 Washington Street, East
Charleston, WV 25311

COMMENTS LIMITED TO: ORAL___, WRITTEN___, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: same as above.

The Department requests that persons wishing to make comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

The issues to be heard shall be limited to the proposed rule.

WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION
Form #2

Do Not Mark In this Box

NOTICE OF A COMMENT PERIOD ON A PROPOSED RULE

AGENCY: West Virginia Division of Banking TITLE NUMBER: 106

RULE TYPE: Legislative ; CITE AUTHORITY West Virginia Code 31A-2-4(c)(11)

AMENDMENT TO AN EXISTING RULE: YES X NO___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 1

TITLE OF RULE BEING AMENDED: Regulations Pertaining to the West Virginia Consumer Credit and Protection Act and the Money and Interest Article of Chapter Forty Seven

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: _____

TITLE OF RULE BEING PROPOSED: _____

IN LIEU OF A PUBLIC HEARING, A COMMENT PERIOD HAS BEEN ESTABLISHED DURING WHICH ANY INTERESTED PERSON MAY SEND COMMENTS CONCERNING THESE PROPOSED RULES. THIS COMMENT PERIOD WILL END ON August 10, 1991 AT 5:00 p.m.

ONLY WRITTEN COMMENTS WILL BE ACCEPTED AND ARE TO BE MAILED TO THE FOLLOWING ADDRESS.

West Virginia Division of Banking
State Capitol Complex
Building 3, Room 311
Charleston, West Virginia 25305
ATTN: Julia Vermillion

THE ISSUES TO BE HEARD SHALL BE LIMITED TO THE PROPOSED RULE.

Sharon J. Bias
Deputy Commissioner of Banking

NOTICE OF PUBLIC HEARINGS

On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14-"Permits for Construction and Prevention of Significant Deterioration" and 45CSR21-"To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks".

Upon authorization and promulgation these regulations will be submitted to the U.S. Environment Protection Agency for incorpation into the West Virginia Implementation Plan under the federal Clean Air Act. 45CSR14 has statewide applicability whereas 45CSR21 would apply to facilities only on Wood, Cabell, Wayne, Kanawha and Putnam Counties.

The hearings will be held in the Commission's Conference Room at 1558 Washington Street East, Charleston, West Virginia. These hearings are open to the public and written and oral testimony by all interested parties will be accepted and made a part of the record.

Copies of the proposed regulations are available for public review in the office of the WV Air Pollution Control Commission, Northern Panhandle Regional Office, 1911 Warwood Avenue, Wheeling, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311
N.R. Aug. 6, 13

91 AUG 16 PM 12:52

STATE OF WEST VIRGINIA,
COUNTY OF OHIO.

I, Bonnie Mattern for the publisher of the WHEELING NEWS-REGISTER ~~WHEELING INTELLIGENCER~~ newspapers published in the CITY OF WHEELING, STATE OF WEST VIRGINIA, hereby certify that the annexed publication was inserted in said newspaper on the following dates:

August 6, 13, 1991

commencing on the 6 day of August, 19 91

Given under my hand this 13 day of August, 19 91

Bonnie Mattern

Sworn to and subscribed before me this 13th day of August 19 91 at WHEELING, OHIO COUNTY, WEST VIRGINIA

Linda E. Miller
Notary Public

of, in and for OHIO COUNTY, WEST VIRGINIA

My Commission expires

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRIGNIA
LINDA E. MILLER
67 E. Main Street
Wheeling, West Virginia 26003
My Commission Expires August 9, 1992

NOTICE OF PUBLIC HEARINGS

On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14 - "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21 - "To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks".

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Copies of the proposed regulations are available for public review in the Parkersburg/Wood County Public Library, 3100 Emerson Avenue, Parkersburg, West Virginia.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

Aug. 6,13

RECEIVED
91 AUG 15 AM 10 30
WV AIR POLLUTION CONTROL COMMISSION

MARCIA MOORE

being first duly sworn, says that the

notice of public hearing -- SEPTEMBER 12th

hereto attached was printed in the Parkersburg News a daily newspaper published in the City of Parkersburg, Wood County, West Virginia, and posted at the front door of the Court House for two successive weeks, the first publication ~~and posting~~ thereon being on the 6th day of AUGUST 19 91, and subsequent publication on the 13th day of AUGUST 19 91, the ..... day of ..... 19 ....., the ..... day of ..... 19 ....., the ..... day of ..... 19 ....., and the ..... day of ..... 19 .....

Printer's Fee $ 32.39

2 7/8" x 103 = 296.125 words @ 10.9375

Marcia Moore

Subscribed and sworn to before me this 13th day of AUGUST 19 91.

Robin C. Covey

Notary Public for Wood County, West Virginia

My commission expires July 23, 1994

OFFICIAL SEAL
NOTARY PUBLIC, STATE OF WEST VIRGINIA
ROBIN C. COVEY
P. O. BOX 1787 PARKERSBURG, WV 26102
MY COMMISSION EXPIRES JULY 23, 1994

Parkersburg Printing Co. - 5/71

I, as an officer of the News-Tribune, a daily newspaper published at Keyser, Mineral County, West Virginia, hereby certify that the Public Hearing

in the case of Prevention of air pollution

vs.

a copy whereof is hereto annexed has been published for 2 consecutive weeks in said NEWS-TRIBUNE, the first publication being on the 7th day of, August 19 91.

Given under my hand at Keyser this 14th day of August, 19 91.

Publisher

Publisher's Fee
$ 27.56

RECEIVED
91 AUG 19 AM 9:42
WEST VIRGINIA
AIR POLLUTION
CONTROL CO.

NOTICE OF PUBLIC HEARING

On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14 - "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21 - "To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks".

Upon authorization and promulgation these regulations will be submitted to the U.S. Environmental Protection Agency for incorporation into the West Virginia Implementation Plan under the federal Clean Air Act. 45CSR14 has statewide applicability where as 45CSR21 would apply to facilities only in Wood, Cabell, Wayne, Kanawha and Putnam Counties.

The hearings will be held in the Commission's Conference Room at 1558 Washington Street East, Charleston, West Virginia. These hearings are open to the public and written and oral testimony by all interested parties will be accepted and made a part of the record.

Copies of the proposed regulations are available for public review in the Keyser-Mineral County Public Library, 105 North Main Street, Keyser, WV.

G.Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311
8:7,14

OFFICIAL SEAL
NOTARY PUBLIC, STATE OF WEST VIRGINIA
A. JUDITH LAYMAN
24 Armstrong St.
Keyser, W.V. 26726
My Commission Expires February 8, 1993

Given under my hand on this the 14th day of August, 1991. My commission expires Feb. 8, 1993.

A. Judith Layman

NOTICE OF PUBLIC HEARINGS

On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14-"Permits for Construction and Major Modification of Major Station Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21-"To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks."

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Copies of the proposed regulations are available for public review in the Martinsburg-Berkeley County Public Library, 101 King Street, Martinsburg, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311
8-6, 12

Certificate of Publication

This is to certify the annexed advertisement

WV DEPT. COMMERCE
AIR POLLUTION CONTROL COMM.

PUBLIC HEARING

appeared for 2 consecutive days/weeks in The Journal Publishing Company a newspaper published in the City of Martinsburg, W. Va., in its issue beginning

8/6

and ending

8/12

The Journal

Pamela K McCauley

Fee $ 32.71

COPY

AFFIDAVIT OF PUBLICATION

NOTICE
NOTICE OF
PUBLIC HEARINGS.
On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14 - "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21 - "To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks."
"Upon authorization and promulgation these regulations will be submitted to the U. S. Environmental Protection Agency, for incorporation into the West Virginia Implementation Plan under the federal Clean Air Act. 45CSR14 has statewide applicability whereas 45CSR21 would apply to facilities only in Wood, Cabell, Wayne, Kanawha and Putnam Counties.
The hearings will be held in the Commission's Conference Room at 1558 Washington Street East, Charleston, West Virginia. These hearings are open to the public and written and oral testimony by all interested parties will be accepted and made a part of the record.
Copies of the proposed regulations are available for public review in the Cabell County Public Library, 455 9th Street Plaza, Huntington, WV.
G. DALE FARLEY
Secretary
LH-1198 $3.10.91

STATE OF WEST VIRGINIA,
COUNTY OF CABELL, TO-WIT:

I, Dianna Webb being first duly sworn, depose and say that I am Legal Clerk for Huntington Publishing Company, a corporation, who publishes at Huntington, Cabell County, West Virginia, the newspaper: The Herald-Dispatch, a independent newspaper, in the morning seven days each week, Monday through Sunday including New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving and Christmas; that I have been duly authorized by the Board of Directors of such corporation to execute this affidavit of publication for and on behalf of such corporation and the newspaper mentioned herein; that the legal advertisement attached in the left margin of this affidavit and made a part hereof and bearing number LH-1198 was duly published in

The Herald-Dispatch

one time, once a week for 2 successive weeks, commencing with its issue of the 3rd day of August, 1991, and ending with the issue of the 10th day of August, 1991, and was posted at the east door of the Cabell County Courthouse

on the 3rd day of August, 1991; that said legal advertisement was published on the following dates: August 3 & 10, 1991

; that the cost of publishing said annexed advertisement as aforesaid was $34.68; that such newspaper in which such legal advertisement was published has been and is now published regularly, at least as frequently as once a week for at least fifty weeks during the calendar year as prescribed by its mailing permit, and has been so published in the municipality of Huntington, Cabell County, West Virginia, for at least one year immediately preceding the date on which the legal advertisement set forth herein was delivered to such newspaper for publication; that such newspaper is a newspaper of "general circulation" as defined in Article 3, Chapter 59, of the West Virginia Code, within the publication area or areas of the municipality of Huntington, Cabell and Wayne Counties, West Virginia, and

; that such newspaper is circulated to the general public at a definite price or consideration; that such newspaper on each date published consists of not less than four pages without a cover; and that it is a newspaper to which the general public resorts for passing events of a political, religious, commercial and social nature, and for current happenings, announcements, miscellaneous reading matters, advertisements and other notices.

Dianna Webb

Taken, subscribed and sworn to before me in my said county this 10th day of August, 1991.

My commission expires 22 March 1992

Bel L Howard

Notary Public
Cabell County
West Virginia

RECEIVED
91 AUG 15 AM 10:06
WEST VIRGINIA
AIR POLLUTION
CONTROL COMMISSION

10M Form A - 135 (87GH)

State of West Virginia, County of Randolph, ss.

Legal Advertisement

NOTICE OF PUBLIC HEARINGS

On Thursday, September 12, 1991 beginning at 9:00 a.m., the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14 — "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21 — "To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage and Petroleum Liquids in Fixed Roof Tanks."

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The hearings will be held in the Commission's Conference Room at 1558 Washington Street East, Charleston, West Virginia. These hearings are open to the public and written and oral testimony by all interested parties will be accepted and made a part of the record.

Copies of the proposed regulations are available for public review in the Elkins-Randolph County Public Library, 416 Davis Avenue, Elkins, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311
8—6, 12

I, James Hoffman, Publisher of THE INTER-MOUNTAIN, a newspaper published at Elkins, in said county, do hereby certify that the annexed advertisement was published on the following dates:

Aug 05 . Aug 12 . _____ _____

19 91 as required by law.

Given under my hand this 12 day of August 19 91

James Hoffman
Publisher

Printer's Fee: $ 32 73

re me this 12 day of August, 19 91.

Evelyn Parsons
Notary Public

My Commission Expires the 4 day of April 19 94.

PUBLISHER'S CERTIFICATE

_____

VS.

_____

STATE OF WEST VIRGINIA,

COUNTY OF HARRISON

I, Deborah S. Veltri

Classified Office Manager of THE CLARKSBURG EXPONENT, a newspaper of general circulation published in the City of Clarksburg, County and State aforesaid, do hereby certify that the annexed

Notice of Public Hearings

was published in said THE CLARKSBURG EXPONENT once a week for 2 successive weeks,

commencing on the 6 day of August 19 91

and ending on the 13 day of August 19 91

The publisher's fee for said publication is $ 18.90

Given under my hand this 13 day of August 19 91

Deborah S Veltri

Classified Office Mgr. of The Clarksburg Exponent

SEAL

Subscribed and sworn to before me this 13 day of August, 19 91

Notary Public in and for Harrison County, WV.

My commission expires on the 24th day of October 1993.

Form CA-15 E

NOTICE OF PUBLIC HEARINGS

On Thursday, September 12, 1991, beginning at 9:00 A.M., the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14 - "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21 - "To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks".

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The hearings will be held in the Commission's Conference Room at 1558 Washington Street East, Charleston, West Virginia. These hearings are open to the public and written and oral testimony by all interested parties will be accepted and made a part of the record.

Copies of the proposed regulations are available for public review in the office of the West Virginia Air Pollution

In the dummy, cashed the Q-
ts, crossed to hand with a club

RECEIVED
91 AUG 15 AM 10:48
AIR POLLUTION
CONTROL COMMISSION

RECEIVED

91 AUG 19 AM 9:51

WEST VIRGINIA
AIR POLLUTION
CONTROL COMMISSION

AFFIDAVIT OF PUBLICATION

STATE OF WEST VIRGINIA,

KANAWHA COUNTY, TO-WIT:

I, Debra L. Caldwell, OF

THE DAILY MAIL, A DAILY REPUBLICAN NEWSPAPER,

PUBLISHED IN THE CITY OF CHARLESTON, KANAWHA COUNTY,

WEST VIRGINIA, DO SOLEMNLY SWEAR THAT THE ANNEXED

NOTICE OF: PUBLIC HEARINGS

WAS DULY PUBLISHED IN SAID PAPER(S) ON THE DATES

LISTED BELOW, AND WAS POSTED AT THE FRONT DOOR OF THE

COURT HOUSE OF SAID KANAWHA COUNTY, WEST VIRGINIA,

ON THE

8TH DAY OF AUGUST , 1991 .

DATES PUBLISHED:

08/07/91 DAILY MAIL 08/14/91 DAILY MAIL

SUBSCRIBED AND SWORN TO BEFORE ME THIS

15TH DAY OF AUGUST , 1991 .

Maureen G. Hartman

NOTARY PUBLIC OF KANAWHA COUNTY, WEST VIRGINIA

PRINTERS FEE $ 39.34

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
MAUREEN G. HARTMAN
[illegible] Road
Charleston, West Virginia 25314
My Commission Expires Dec. 19, 1999

NOTICE OF PUBLIC HEARINGS

On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14-"Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21-"To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks".

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The hearings will be held in the Commission's Conference Room at 1558 Washington Street East, Charleston, West Virginia. These hearings are open to the public and written and oral testimony by all interested parties will be accepted and made a part of the record.

Copies of the proposed regulations are available for public review in the Library of the West Virginia Air Pollution Control Commission located at the address below.

G. Dale Farley
Secretary
WV Air Pollution
Control Commission
1558 Wash. Street East
Charleston, WV 25311

(840675)

AFFIDAVIT OF PUBLICATION

BECKLEY NEWSPAPERS INC.

BECKLEY, WEST VIRGINIA 25801

August 15, 19 91

STATE OF WEST VIRGINIA
COUNTY OF RALEIGH, to wit:

I, Robert E. Zutaut being first duly sworn upon my oath, do depose and say that I am Advertising Manager of Beckley Newspapers Inc., a corporation, publisher of the newspaper entitled The Register-Herald, an Independent newspaper; that I have been duly authorized by the board of directors of such corporation to execute this affidavit of publication; that such newspaper has been published for more than one year prior to publication of the annexed notice described below; that such newspaper is regularly published daily, for at least fifty weeks during the calendar year, in the municipality of Beckley, Raleigh County, West Virginia; that such newspaper is a newspaper of "general circulation," as that term is defined in article three, chapter fifty-nine of the Code of West Virginia, 1931, as amended, within the publication area or areas of the aforesaid municipality and county; that such newspaper averages in length four or more pages, exclusive of any cover, per issue; that such newspaper is circulated to the general public at a definite price of consideration; that such newspaper is a newspaper to which the general public resorts for passing events of a political, religious, commercial and social nature, and for current happenings, announcements, miscellaneous reading matters, advertisements and other notices; that the annexed notice

of Notice of Hearing
(Description of notice)

was duly published in said newspaper once a week for 2

successive weeks (Class II), commencing with the issue of the

8th day of August, 1991, and ending with the issue

of the 15th day of August, 1991, (and was posted at the

on the _____ day of _____); that said annexed

notice was published on the following dates: _____

8/8, 8/15/91 and that the

cost of publishing said annexed notice as aforesaid was $29.28

Signed R. E. Zutaut
Robert E. Zutaut, Advertising Manager
Beckley Newspapers

Taken, subscribed and sworn to before me in my said county this

15th day of August 19 91

My commission expires March 27, 2001

Diana L. Sloan
Notary Public of Raleigh County, West Virginia

OFFICIAL NOTARY PUBLIC
STATE OF WEST VIRGINIA
DIANA L. SLOAN
BECKLEY NEWSPAPERS
P.O. BOX 2369
BECKLEY, WV 25802-2369
My Commission Expires March 27, 2001

R/H

COPY OF PUBLICATION

NOTICE OF PUBLIC HEARINGS
On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14 - "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21 - "To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids In Fixed Roof Tanks".

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The hearings will be held in the Commission's Conference Room at 1558 Washington Street East, Charleston, West Virginia. These hearings are open to the public and written and oral testimony by all interested parties will be accepted and made a part of the record.

Copies of the proposed regulations are available for public review in the Raleigh County Public Library, P.O. Box 1676, Beckley, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

8-15-Thu-2-RH

State of West Virginia, County of Upshur, ss:

Phyllis Neuharth Legal clerk
~~Advertising Manager~~

Record Delta, a newspaper published at Buckhannon in the said county, do hereby certify that the annexed

Notice Of Public Hearing

was published once a week for (2) two successive weeks in said Record Delta newspaper published as aforesaid, commencing on the

7th and 14th days of August days of 19 91

Given under my hand this 20th day of August day of 19 91

Phyllis Neuharth Legal clerk
~~Advertising Manager~~

Printers fee $ 15.05

WEST VIRGINIA, UPSHUR COUNTY, TO-WIT:

Subscribed and sworn to before me this 21st day of Aug day of 1991

Linda Snyder Notary Public.

My Commission expires LINDA SNYDER 29, 1999

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
LINDA SNYDER
P. O. Box 1103
Buckhannon, WV 26201
My Commission Expires March 29, 1999

RECEIVED
AUG 23 1991
AIR QUALITY

LEGAL NOTICE

NOTICE OF PUBLIC HEARINGS

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Copies of the proposed regulations are available for public review in the Gassaway Public Library, 100 Birch Street, Gassaway, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311
(8-7,14)

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

Telephone: (304)348-4022
or (304)348-3286
Fax: (304)348-3287

NOTICE OF PUBLIC HEARINGS

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Copies of the proposed regulations are available for public review in the Gassaway Public Library, 100 Birch Street, Gassaway, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

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Copies of the proposed regulations are available for public review in the Elkins-Randolph County Public Library, 416 Davis Avenue, Elkins, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

Telephone: (304)348-4022
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Copies of the proposed regulations are available for public review in the Martinsburg-Berkeley County Public Library, 101 King Street, Martinsburg, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

Telephone: (304)348-4022
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Copies of the proposed regulations are available for public review in the office of the WV Air Pollution Control Commission, Northern Panhandle Regional Office, 1911 Warwood Avenue, Wheeling, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

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Copies of the proposed regulations are available for public review in the Parkersburg/Wood County Public Library, 3100 Emerson Avenue, Parkersburg, West Virginia.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

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Copies of the proposed regulations are available for public review in the Cabell County Public Library, 455 9th Street Plaza, Huntington, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

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Copies of the proposed regulations are available for public review in the Library of the West Virginia Air Pollution Control Commission located at the address below.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

Telephone: (304)348-4022
or (304)348-3286
Fax: (304)348-3287

NOTICE OF PUBLIC HEARINGS

On Thursday, September 12, 1991 beginning at 9:00 a.m. the West Virginia Air Pollution Control Commission will conduct public hearings on these proposed regulations or revised regulations: 45CSR14 - "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration" and 45CSR21 - "To Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds From the Storage of Petroleum Liquids in Fixed Roof Tanks".

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Copies of the proposed regulations are available for public review in the Raleigh County Public Library, P. O. Box 1876, Beckley, WV.

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WV Air Pollution Control Commission
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Copies of the proposed regulations are available for public review in the Keyser-Mineral County Public Library, 105 North Main Street, Keyser, WV.

G. Dale Farley
Secretary
WV Air Pollution Control Commission
1558 Washington Street East
Charleston, WV 25311

SUMMARY OF COMMENTS AND RESPONSES TO PROPOSED 45CSR21

West Virginia Manufacturers Association
September 12, 1991

General Comments/Responses:

1. The proposed regulation should not prescribe particular measures and procedures for implementing RACT.

   APCC agrees in part; provision for alternative control plan was added. Refer to U.S. EPA's response of November 13, 1991.

2. Series 21 should apply only to major sources of VOCs.

   APCC disagrees. Refer to U.S. EPA's response of November 13, 1991.

3. A. Section 8 should be deleted in its entirety because it fails to close any significant gap in the regulation.

   APCC disagrees that section 8 should be deleted. Changes were made to clarify the intent of the section (refer to 3C. below).

   B. The 5 kilogram (11 lb) limit of section 8 is in conflict with the 6.8 kilogram (15 lb) limit of sections 4.2.a.4 and 40.4.a.

   APCC agrees; change was made.

   C. Surface impoundments, pits, incinerators, wastewater treatment plants should be exempted from the requirements of section 8.

   APCC agrees; change was made.

4. A. Section 9.1 should provide for a 180 day timeframe for development of individual compliance programs, not 60 days.

   APCC agrees; change was made.

   B. Section 9.1 arbitrarily limits the timeframe for compliance specified in the individual compliance programs to two years, unless it is demonstrated that the two-year timeframe is economically or technologically infeasible (in which case it may extend to May 31, 1995). The two-year limit and the economic and technologic criteria should be removed.

   APCC agrees; change was made.

   C. Orders for additional compliance time should not require U.S. EPA approval.

   APCC disagrees. Refer to U.S. EPA's response of December 16, 1991.

5. The requirements of Series 21 should be coordinated with the requirements of Title III of the Clean Air Act Amendments, Series 25 and Series 27 of the Commission's regulations, the federal air emissions under

RCRA, and the federal NSPS regulations.

APCC disagrees. Refer to U.S. EPA's response of November 13, 1991.

6. The regulation should indicate that sources implementing MACT or seeking early reductions to receive MACT extension should be sufficient for purposes of the RACT standards of Series 21.

APCC disagrees. Refer to U.S. EPA's response of November 13, 1991.

7. Section 40 should be deleted in its entirety because it addresses sources for which RACT has not been defined; sources below the 100 ton applicability threshold are subject to certification, recordkeeping, and reporting requirements; many sources are already regulated under other regulations and standards.

APCC disagrees. Refer to U.S. EPA's response of November 13, 1991.

8. Inconsistent use of the terms "facility", "process unit", and "source" should be corrected.

APCC disagrees. One change from source to facility was made. Where "process unit" is used, it is defined specifically in those sections (except section 26). Both "facility" and "source" are defined in section 2, and usage appears to be as intended.

Specific Comments/Responses:

1. Section 2 - Definition of "modified source" should be added to General Definition section.

APCC agrees. The definition "Modification" or "Modified" was included.

2. Section 2 - General definition for term "In VOC Service" should be added to section 2.

APCC disagrees. This term is defined in the three specific sections that it appears (26, 29, and 37). No purpose would be served (other than possibly creating confusion) by adding this definition to section 2.

3. Sections 2.56 and 2.60 (Page 7) - Meanings of terms "shutdown" and "process unit shutdown" should be clarified.

APCC agrees. The definition of "process unit shutdown" was clarified by removing the definition of "shutdown" which was deemed not necessary.

4. Section 2.57 (Page 7) - RACT should not be defined solely in terms of control technologies; this language may be construed as limiting RACT to the application of control equipment.

APCC disagrees. Section 2.55 corresponds to U.S. EPA's definition of RACT. The term control technology is sufficiently broad that it is not limited

solely to equipment, but includes all methods and materials used to obtain an objective.

5. Section 2.77 (Page 9) - Definition of VOC should incorporate minimum vapor pressure.

APCC disagrees. Section 2.77 corresponds to U.S. EPA's definition of VOC. Although minimum vapor pressure was the old criteria, U.S. EPA determined that incorporating minimum vapor pressure would exempt compounds of low volatility, which, under certain processes, would volatilize and participate in photochemical reactions. The newer criteria is thus negligible photochemical reactivity.

6. For coating sources, the applicability threshold should not be determined in absence of control devices.

APCC disagrees. This is in accordance with "Issues Relating To VOC Regulation - Cutpoints, Deficiencies, And Deviations", Clarification to Appendix D of November 24, 1987 Federal Register, May 25, 1988. Refer to U.S. EPA's response of November 13, 1991.

7. Section 5.1 (Page 20) - Initial compliance certification should be required within 12 months of the effective date of the regulation instead of six months; also, this initial compliance certification should be limited to registration of sources.

APCC agrees with the twelve months, and change was made. However, this makes the time frame for this certification one year from the effective date of the regulation; this coincides with the time frame for compliance. If this certification was limited to registration only, many sources would probably find themselves unable to meet the compliance date due to procrastination, unawareness, etc. Also, by limiting the initial certification to registration, two submittals would be required instead of one.

8. Section 5.2 (Page 21) - Reporting requirement of section 5.2 should be limited to releases in excess of numerical emission standards.

APCC agrees. Definition of "Excess emissions" was added in section 2.

9. Section 5.3 (Page 21) - Testing of control equipment should not be required prior to start-up for changes at existing sources.

APCC agrees. This item was clarified by adding a reference to section 41 which specifies time frames for testing of control equipment for existing, new, or modified sources.

10. Section 5.3.b.1 (Page 21) - Continuous Recordkeeping requirement should be abandoned.

APCC agrees; change was made.

11. Section 9.3 (Page 26) should extend to repairs made as the result of routine maintenance.

APCC agrees; change was made.

12. Section 9.4. (Page 27) - Regulation should authorize the use of general permits.

APCC disagrees. The operating permit program required by the Clean Air Act Amendments will not be adopted until 1994. The permit will not be in place to implement the provisions of this regulation by the projected May 1992 effective date.

13. The once-in/always-in provision should be deleted and replaced with mechanism for certifying exemption.

APCC agrees in part; exemption for zero potential emissions was added. Refer to U.S. EPA's response of November 13, 1991.

14. Section 22.2.h (Page 69) - Monthly inspection of vapor collection system, vapor control system, and loading racks at bulk gasoline terminals is too frequent.

APCC disagrees. As specified in section 22.2.h, "detection methods incorporating sight, sound, or smell are acceptable".

15. Section 23.1 (Page 74) - Implementation of Stage I vapor recovery should apply only to commercial gasoline dispensing facilities.

APCC disagrees.

16. Section 23.3 (Page 75) - Records should be made available within a reasonable time of request, not "immediately".

APCC agrees. "Immediately" was removed from sections 21.4, 23.3, 24.5.a, 24.5.d, 26.10.a, 39.6., and 40.6.

17. Section 30.1 (Page 103) - Exemption should extend to cold cleaning facilities utilizing cleaning baths.

APCC disagrees. This is in accordance with "Issues Relating To VOC Regulation - Cutpoints, Deficiencies, And Deviations", Clarification to Appendix D of November 24, 1987 Federal Register, May 25, 1988.

18. Section 34.1 (Page 127) - Exemption from certification, recordkeeping, and reporting requirements should be created for small printing operations.

APCC disagrees. U.S. EPA requires certification, recordkeeping, and reporting even from small sources to determine whether their emissions are above or below any applicability threshold.

19. Section 37.1 (Page 150) - Exemption for pumps and valves in heavy liquid service should be incorporated in section 37.1.

APCC agrees. Provision was added to section 37.1.c.

20. Section 37.1.b (Page 150) - Exclusion should apply to process unit rather

than facility.

APCC agrees; change was made.

21. Section 37.4.e (Page 153) - More flexibility should be allowed in tagging leaks.

APCC agrees. Provision for alternative leak identifier system was added.

22. Section 40.1 (Page 184) - Exemption for pilot facilities should be included.

APCC disagrees. Section 182(b)(2) of the Clean Air Act Amendments requires all major sources of VOC emissions to apply RACT; WV has several "pilot" facilities that are major VOC emitters.

23. Section 40.1.b and 40.1.c (Page 184) - Facilities emitting less than the applicability threshold should not be subject to certification, recordkeeping, and reporting requirements. At a minimum, the exemption should be lowered to 50 tons per year.

APCC disagrees. U.S. EPA's guidance requires extensive recordkeeping and reporting requirements to determine whether a source is above or below an applicability threshold.

24. Section 40.1.e (Page 184) - Surface impoundments, incinerators, pits, etc., should be exempted from the requirements of section 40.

APCC agrees; change was made.

25. Section 40.2.a (Page 184) - Baseline year and applicable unit to which the 81 percent reductions apply should be specified.

APCC agrees; change was made.

26. Section 41.4 and 41.5 (Page 189) - Timeframes are inadequate to prepare final report on test results.

APCC agrees. Timeframe was changed to 60 days.

27. Section 44.1.b.3 (Page 196) - Clarification is required on whether explicit measure of capture efficiency is required for gas carbon adsorbers.

APCC agrees. Section 44.1.b.3. was clarified.

28. Section 44.2.b.1. (Page 199) - Continuous monitoring is not possible before and after the carbon adsorption bed.

APCC agrees. "Continuous" was removed.

29. Section 44.2.b.1.B (Page 199) - Clarification of the phrase "across each catalytic incinerator bed" is needed.
APCC agrees. Sections 44.2.b.1.A., 44.2.b.1.B., and 44.2.b.1.C. were clarified.

30. Section 45.8 (Page 202) - Test methods should be performed only once per test run.

APCC agrees; change was made.

GE Plastics
September 18, 1991

The regulation should be modified to give facilities the flexibility to opt into early reduction of toxic emissions. Such wording may include an exemption for emission points/sources applying for/receiving an extension to MACT implementation.

APCC disagrees. Refer to General Comment No. 6 above and U.S. EPA's response of November 13, 1991.

E. I. Du Pont De Nemours & Company
July 11, 1991

Note: Eight comments were submitted prior to initial filing, the first two of which were addressed before this proposed regulation was filed. Five of the comments (Nos. 3, 4, 5, 7, and 8) coincided with those of the West Virginia Manufacturers Association, and comment No. 6 and its response is given below.

3. Refer to Specific Comment No. 7 above.

4. Refer to General Comment No. 3B. and 3C. above.

5. Refer to General Comment No. 4 above.

6. Section 39.5 (Page 174) - Table 1, which gives the coefficients for the Total Resource Effectiveness (TRE) Equation, does not agree with the table published in the June 29, 1990 Federal Register for this same category.

APCC agrees. No change was made because Table 1 is the same as that contained in the CTG (Control Technical Guidance) Document published by U.S. EPA in December 1984 for this category (RACT), whereas the newer version covers New Source Performance Standards.

7. Refer to Specific Comment No. 26 above.

8. Refer to Specific Comment No. 30 above.

STATEMENT OF THE WEST VIRGINIA MANUFACTURERS ASSOCIATION
ON PROPOSED SERIES 21

September 12, 1991

Members of the Air Pollution Control Commission, and Director Farley. My name is Robert L. Foster. I am Chairman of the West Virginia Manufacturers Association's Environmental, Safety and Health Committee. I am speaking today on behalf of the WVMA regarding the proposed Series 21 regulations concerning emissions of volatile organic compounds for facilities in ozone nonattainment areas.

The WVMA has submitted today a number of detailed comments on the proposed Series 21 regulation. I will not attempt to summarize these comments, but will limit my statement to what we see as the fundamental flaw of the proposed regulation, which can be summarized as follows: In prescribing the regulatory requirements applicable to the various sources of VOCs, the proposed regulation goes far beyond what is required under the Clean Air Act Amendments of 1990 for states containing "moderate" ozone nonattainment areas.

Pursuant to Title I of the Clean Air Act Amendments of 1990, EPA requires those states containing moderate ozone nonattainment areas to revise their State Implementation Plans to require existing sources to implement reasonably available control measures, including reasonably available control technology (RACT). This requirement applies only to major stationary sources of VOCs. For moderate ozone nonattainment areas, the term "major" source is defined in terms of the potential to emit over 100 tons of VOCs per

year with controls in place. In contrast, the APCC's proposed Regulation No. 21 generally makes no distinction between major and minor stationary sources of VOCs. The adoption of this approach will have a dramatic impact on industry in these nonattainment areas, since the resulting regulation extends to sources which emit nominal amounts of VOCs. This result is clearly not contemplated under the Clean Air Act Amendments of 1990.

In addition to the hardships the proposed rule imposes on minor sources of VOC emissions, the proposed rule also goes beyond the requirements of the Clean Air Act Amendments of 1990 by prescribing in great detail steps which must be taken by individual stationary sources to implement RACT. The federal program contemplates that RACT will be determined on a case-by-case basis for sources not covered by a control techniques guideline (CTG) document. For sources covered under a CTG document, the CTG represents a recommendation about the measures EPA believes are sufficient and necessary to constitute RACT. The states need not define RACT in a manner more stringent or more detailed than the CTG. The CTG documents define RACT in terms of general criteria, such as recovery efficiency. The various control technologies, work practices, process changes, and operational methods which are discussed in the CTG documents are intended only for purposes of illustration. This approach is intended to provide maximum flexibility, in recognition of the inherent unfairness of imposing rigid requirements on existing sources (as opposed to new sources. In contrast, the APCC's proposed Series 21 seeks to rigidly define

the steps and procedures that existing sources must implement to meet RACT requirements. These standards borrow heavily from the standards applicable to new sources under the federal New Source Performance Standards. The proposed regulation also imposes detailed and rigid monitoring, recordkeeping and reporting requirements and that are not well coordinated with other provisions of the State's air program. This rigid regulatory scheme fails to appropriately take into account that the provisions will be applied to existing sources rather than new sources.

The differences between the requirements of the Clean Air Act and the requirements of the proposed regulation are apparently rooted to some degree on guidance received from EPA in the form of a "model regulation" provided to the Director. The staff's apparent reliance on this "model regulation" raises two significant points. First, the document is intended only as guidance. It has not been published in the Federal Register or subjected to notice and comment, and reflects only the initial views of EPA on the provisions that might be included in state programs. These views will continue to develop and undergo change as EPA begins the process of reviewing and approving State Implementation Plans. Ultimately, State Implementation Plans will be approved or disapproved on the basis of whether they implement the requirements of the Clean Air Act. Second, from a practical standpoint, the WVMA notes the ozone nonattainment problems experienced in West Virginia are relatively insignificant when compared to the nonattainment problems of other states. The nonattainment areas in

West Virginia are significantly impacted by the transport of VOC emissions from out-of-state. In addition, these areas have been designated as moderate nonattainment areas primarily on the basis of 1988 data. These circumstances tend to overshadow the significant reductions in VOC emissions which have been achieved under existing regulations. It is not necessary to go beyond the requirements of the Clean Air Act for these reductions to continue or for the ambient standards to be achieved. We, therefore, urge the Commission to restructure this rule to reflect a fundamentally more simple and flexible approach which will result in the development and approval of case-by-case RACT compliance plans for sources which, in many cases, will be struggling concurrently to meet not only this rule, but also Regulation 27 and the new federal Title III Air Toxics program.

On behalf of the WVMA, we express our appreciation for the opportunity to present this statement and to submit our written comments to the Commission. Those of us who are here today on behalf of the WVMA stand ready to answer any questions the Commission may have regarding these proposals.

WEST VIRGINIA
MANUFACTURERS ASSOCIATION

SUITE 503
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CHARLESTON, WV 25301
TELEPHONE (304) 342-2123

September 12, 1991

HAND DELIVERED

Mr. G. Dale Farley, Director
Air Pollution Control Commission
1558 Washington Street, E.
Charleston, West Virginia 25311

Dear Director Farley:

Enclosed, please find for purposes of filing the comments of the West Virginia Manufacturers Association ("WVMA") regarding proposed Series 21 (Regulations to Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds) filed July 15, 1991.

The WVMA continues to encourage the Commission to revise the proposed regulation to implement only those provisions mandated by the Clean Air Act Amendments of 1990. The WVMA objects to the detailed approach the proposed regulation adopts in defining RACT for existing stationary sources of VOCs. The WVMA also objects to the expansion of the scope of the regulation to include emissions from both major and minor sources of VOCs. The expansive scope of the regulation, along with the degree of detail incorporated, has resulted in a great deal of confusion over the intended application of specific sections of the regulation.

The WVMA appreciates the opportunity to offer these comments to the Commission, and trusts as always that the Commission will give these comments due and deliberate consideration. Please contact me at your convenience if you wish to discuss any of these comments.

Very truly yours,

R. L. Foster

Robert L. Foster
Chairman, Environmental Safety
and Health Committee

RLF/bla
enc.

WEST VIRGINIA
MANUFACTURERS ASSOCIATION

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COMMENTS OF THE WEST VIRGINIA MANUFACTURERS ASSOCIATION TO THE PROPOSED REGULATION OF THE WEST VIRGINIA AIR POLLUTION CONTROL COMMISSION 45 C.S.R. SERIES 21 REGULATIONS TO PREVENT AND CONTROL AIR POLLUTION FROM THE EMISSION OF VOLATILE ORGANIC COMPOUNDS

Prepared By:

Environmental, Safety & Health Committee
West Virginia Manufacturers Association

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September 12, 1991

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September 12, 1991

I. INTRODUCTION

On July 15, 1991, the West Virginia Air Pollution Control Commission ("APCC" or "Commission") filed with the Secretary of State a proposed rule, 45 C.S.R. Series 21, covering stationary sources in designated ozone nonattainment areas that emit volatile organic compounds ("VOCs"). Accompanying the proposed rule was a notice requesting both written and oral comment. Pursuant to this notice, the WVMA has undertaken a review of the proposed rule, and files these comments.

The WVMA represents a broad cross-section of large and small industrial concerns throughout West Virginia, including the areas affected by the proposed Series 21 regulation. The proposed regulation will have a dramatic effect on stationary sources of VOCs located in the nonattainment areas included within the scope of the regulation. In keeping with the WVMA's supportive position regarding the development of West Virginia's air pollution control program, the WVMA offers these comments as a means to facilitate

the development of a reasonable and protective program, consistent with the requirements of Title I of the Clean Air Act Amendments of 1991, for the reduction of VOC emissions from sources in nonattainment areas.

II. GENERAL COMMENTS

1. The proposed regulation should not prescribe particular measures and procedures for implementing RACT.

The proposed regulation goes well beyond the level of complexity and specificity required by Congress under the Clean Air Act Amendments of 1990 (CAAA) to ensure that Reasonably Available Control Technologies (RACT) are implemented in existing sources located in ozone nonattainment areas. The proposed regulation imposes specific standards and monitoring, recordkeeping, and reporting requirements on 31 categories of sources, including a "catch-all" category (Section 40). Under Section 182(b)(2) of the Clean Air Act, each state must require implementation of reasonably available control measures, including RACT, at all existing major sources of VOCs located in areas designated moderate and above for ozone nonattainment. On June 7, 1991, EPA issued a working draft of its General Preamble regarding implementation of Title I of the CAAA (General Preamble). The General Preamble states that RACT must be determined on a case-by-case basis for sources not covered by a Control Techniques Guideline (CTG) document. For sources covered under a CTG document, the General Preamble states that the

CTG represents "a presumptive norm and a recommendation about the measures EPA believes are sufficient and necessary to constitute RACT . . . [citations omitted]." See General Preamble at 55. States need not define RACT in a manner more stringent or more detailed than the CTG. Indeed, states are free to develop a case-by-case RACT requirement independent of the CTG if shown that the more general state criteria is as stringent as the measures the CTG would recommend, or if less stringent than the CTG, that the less stringent requirements represent an appropriate and rational RACT determination under the circumstances. See General Preamble at 55. This approach is intended to provide the maximum possible flexibility in applying RACT to individual sources, in recognition of the many differences present among existing sources within any given category and the inherent unfairness associated with the rigid application of any single standard to all existing sources within a category. Congress anticipated that the particular measures, technologies and procedures constituting RACT would vary from source to source. Application of a rigid regulatory scheme to existing sources, e.g., the requirements imposed upon new sources under the New Source Performance Standards (NSPS), would be imprudent and undesirable from a regulatory standpoint, since such a scheme would fail to take into account the regulatory requirements in place and the technologies available at the time the existing facilities were built. In addition, W. Va. Code § 16-20-5(4) prohibits the Commission from prescribing the use of a

single specific type of construction or particular method of compliance in its regulations unless specifically required by the federal Clean Air Act. Section 182(b)(2) of the Clean Air Act does not prescribe any specific type of construction or particular method of compliance as constituting RACT.

In drafting the proposed regulation, the Commission could have set general criteria deemed adequate to achieve the reductions required under the CAAA, leaving it to existing sources to determine how the criteria would be met. This approach has been successfully implemented under Series 27 of the Commission's regulations. Individual compliance programs and/or permit applications submitted by the existing sources could then be approved or rejected using CTG documents as guidance. This practice would be consistent with the purpose of the RACT requirement, which is to ensure that all existing major sources implement reasonably available control measures under the particular circumstances, not to prescribe particular measures to be taken in any given circumstance. This approach would also provide flexibility in establishing monitoring, recordkeeping, and reporting requirements. Instead, the Commission has developed a rigid program which borrows heavily from the NSPS provisions of the federal regulations in imposing specific measures, technologies and practices, as well as specific monitoring, recordkeeping, and reporting requirements on existing sources.

RECOMMENDATION

The WVMA requests that Sections 10 through 40 of the proposed regulation be revised to set general criteria which existing sources will be required to meet through the implementation of individually approved reasonably available control measures, including RACT. In describing the particular measures that will be deemed to constitute reasonably available control measures, the CTG documents should be cross-referenced as being representative of the types of reasonably available control measures the Director and Commission may approve as meeting the general criteria established under the regulation.

2. Series 21 should apply only to major sources of VOCs.

As proposed, Series 21 fails to specify that the requirements of Series 21 apply only to major sources of VOCs. Under §182(b)(2) of the Clean Air Act, State Implementation Plans (SIPs) must be revised to require installation of reasonably available control measures, including RACT, for all major sources of VOCs. RACT is not required for minor sources of VOCs. As proposed, however, Series 21 will have a dramatic impact on numerous minor sources. With the exception of Sections 34 (Graphic Art Systems) and 40 (Other Facilities), each of the categories listed in the proposed regulation applies to both major and minor sources of VOCs. For example, Sections 10 through 20 of the proposed regulation apply to various coating operations which emit as little as 6.8 kilograms

(kg) (15 pounds) of VOCs per day, with the certification, recordkeeping and reporting requirements of Sections 10 through 20 extending to coating operations emitting less than 6.8 kg per day. In addition, Sections 22 (Bulk Gasoline Terminals), 25 (Petroleum Refinery Sources), 32 (Manufacture of Synthesized Pharmaceutical Products), 33 (Pneumatic Rubber Tire Manufacturing), 36 (Perchloroethylene Dry Cleaning), 38 (Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins), and 39 (Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry) apply without regard to the size of the source. Other categories impose size limitations which are not tied to the emission of 100 tons or more VOCs per year. Indeed, Sections 34 and 40 impose certification, recordkeeping, and reporting requirements on sources clearly falling below the 100 ton emissions level.

The proposed regulation even fails to define the term "major source." For marginal and moderate ozone nonattainment areas, the term "major source" is intended to refer to sources which emit or have the potential to emit 100 tons or more VOCs per year. See Clean Air Act §302. For serious areas, the term "major source" includes "any stationary source or group of sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 50 tons per year of volatile organic compounds." Clean Air Act §182(c). For severe areas, the term "major source" includes stationary sources which have the potential

to emit 25 tons per year of VOCs. Clean Air Act §182(d). In extreme nonattainment areas, the term "major source" is defined to include sources which have the potential to emit 10 tons per year of VOCs. Clean Air Act §182(e).

Presently, the State of West Virginia contains only areas designated as "moderate" or "marginal" nonattainment areas. Thus, for these areas, the term "major source" would be defined as a source having the potential to emit over 100 tons of VOCs per year. However, because of the possibility that the designation of one or more of these areas could change, or that other areas in the State could be designated as ozone nonattainment areas, the definition of "major source" under the proposed regulation should also include the quantity limits for serious, severe, and extreme nonattainment areas.

RECOMMENDATION

Section 3 of Series 21 should be revised to state that "this regulation applies only to major sources of VOCs, as that term is defined in Section 2 of these regulations." Sections 10 through 40 should be revised to indicate that the standards and monitoring, recordkeeping, and reporting requirements of those sections apply only to major stationary sources of VOC emissions. In addition, a definition of the term "major source" should be added to Section 2 of Series 21 to state as follows:

a. For marginal or moderate areas, any stationary source or group of sources located within a contiguous area and under common control that

emits, or has the potential to emit, at least 100 tons per year of VOCs.

b. For serious areas, any stationary source or group of sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 50 tons per year of VOCs.

c. For severe areas, any stationary source or group of sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 25 tons per year of VOCs.

d. For extreme areas, any stationary source or group of sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 10 tons per year of VOCs.

3. Section 8 should be deleted in its entirety.

Section 8 does not indicate the types of emissions that are subject to its requirements. If Section 8 is intended as a general "stopgap" provision for process-derived emissions of VOCs that escape regulation under sections 10 through 40 of the proposed regulation, it fails to adequately serve this purpose for several reasons. For coating facilities that are exempt under the 100 ton applicability threshold of Section 40, the 5 kilogram (kg) (11 lbs) limit of Section 8 is in conflict with the 6.8 kg (15 lbs) limit of Section 4.2.a.4 (which is imposed under Section 40.4.a on exempt coating sources). In addition, for non-coating sources falling below the 100 ton applicability threshold of Section 40, it makes no sense to impose a 5 kg limitation on daily emissions. In the vast majority of cases, the 5 kg limitation would be more

difficult for facilities to meet than the 81 percent emission reductions applicable under Section 40.2 for sources exceeding 100 tons, thus making it advantageous for these facilities to withhold documentation that the source is exempt from the standards of Section 40.2. Thus, the practical effect of applying the 5 kg limitation of Section 8 to exempt non-coating sources is to render the exemption for facilities falling below the 100 ton applicability threshold of Section 40.1.a meaningless.

Alternately, if Section 8 is intended as a stopgap provision for emissions other than process-derived emissions, i.e., emissions from disposal of materials containing VOCs, the WVMA objects to the inclusion of Section 8 on the basis that Title I of the CAAA does not require such a provision. As stated above in Comment 1, Section 182(b)(2) of the Clean Air Act requires only that RACT be implemented at existing major sources of VOCs. Title I of the CAAA does not contemplate that <u>every</u> source of VOCs will be regulated, especially insignificant sources such as sources emitting only 5 kg per day. Thus, inclusion of Section 8 would result in the State regulations being more stringent than the federal requirements. Indeed, as presently drafted, the 5 kg limitation of Section 8 would effectively prevent facilities from treating or disposing of VOC-containing materials in surface impoundments, pits, incinerators, or wastewater treatment plants unless Section 8 is revised to specifically exclude these sources.

RECOMMENDATION

Because Section 8 fails to close any significant gap in the proposed regulations, the WVMA requests that Section 8 be deleted in its entirety. If Section 8 is not deleted, this section should be revised to state clearly that it applies only to non-process derived emissions of VOCs (i.e., VOC-containing materials which are placed in open containers for the purpose of allowing VOCs to evaporate into the ambient air). Section 8 should state that the 5 kg daily limitation applies to the amount of VOCs which are disposed of through evaporation, and not to the amount of VOC-containing materials stored, treated, or disposed. In addition, Section 8 should specifically state that it does not apply to the discharge of VOCs from materials that are being stored, treated, or disposed in surface impoundments, pits, incinerators, wastewater treatment facilities, etc.

4. **Submission and approval of compliance programs.**

Section 9.1 (Page 25) requires sources which must make major process changes and/or major capital expenditures as a result of the proposed regulation to develop and submit to the Commission within 60 days of the effective date of the proposed regulation acceptable programs to comply with the regulatory provisions of Series 21. The proposed regulation does not define the terms "major process change" or "major capital expenditure." Furthermore, the proposed 60-day period for development and

submission of the individual RACT compliance programs will be an insufficient amount of time for the development of such compliance programs. The complexity of individual compliance programs will vary greatly from source to source, depending upon source size, number of units to be controlled, and the types of process changes and amount of capital expenditures which will be necessary to implement the requirements of the new regulation. In some cases, testing and evaluations will be required to develop a compliance program, often requiring the assistance of outside contractors. Thus, the regulation should provide for a more reasonable timeframe for development of individual compliance programs, i.e., at least 180 days.

In addition, Section 9.1 states that the timeframe for compliance specified in the individual compliance programs may not exceed two years from the effective date of the proposed regulation unless the owner/operator demonstrates that the two-year timeframe is economically or technologically infeasible, in which case the Commission may issue an order for additional time for compliance not to extend later than May 31, 1995. The timeframe for compliance should not be arbitrarily limited to two years by the regulation. Clean Air Act Section 182(b)(2) states that SIPS must require implementation of RACT "as expeditiously as practicable but no later than May 31, 1995." The proposed regulation should be revised to incorporate the flexibility of the federal language, thus allowing individual sources to work with the Commission to

establish implementation dates without a formal showing of economic or technological infeasibility.

Finally, it is noted that the regulation utilizes administrative orders of the Commission (presumably consent orders) as the mechanism for approving individual compliance programs. The WVMA is concerned that each order of the Commission may have to be approved by EPA as a change to the SIP in order to satisfy the requirements of the federal Clean Air Act for purposes of federal enforcement. If this is the case, a great and unnecessary administrative burden will result from the significant time delays that would follow. The number of sources that will be covered by proposed Series 21 will represent a dramatic increase over the number of sources that are presently subject to the existing VOC regulations of Series 21, 23, and 24. The vast majority of the sources that will be subject to the new VOC regulations have not implemented RACT, and thus will be required to develop and submit compliance programs for approval by the Commission. If each order issued by the Commission requires EPA approval prior to becoming part of the SIP, EPA will be faced with a backlog of such orders, and typically take several months to review and approve such SIP revisions. The WVMA foresees significant delays in receiving federal approval of individual compliance programs. As a result, regulated entities might then be forced to make major investments in new technology and process changes in order to meet the timeframes specified in the Commission's orders, only to be

required to revise technologies or processes in order to satisfy EPA requirements.

RECOMMENDATION

Section 9.1 should be revised to grant sources at least 180 days from the effective date of the regulation for regulated sources to develop and submit compliance programs. The fourth sentence of Section 9.1, which begins "No such compliance program shall exceed two years . . .," should be revised to state that "compliance programs shall provide for the implementation of required measures as expeditiously as practicable, but no later than May 31, 1995." The seventh sentence of Section 9.1, which begins "All such orders shall contain a schedule and timetable . . .," should be deleted, as should be the Note that follows the seventh sentence. Section 2 should be revised to add definitions for the terms "major process change" and "major capital expenditures." The applicability of these definitions should be limited to Section 9.1 of the proposed regulation.

In addition, prior to determining whether individual RACT compliance plans should be approved through the use of administrative orders, the Commission should receive written assurance from EPA that the individual administrative orders will not require EPA approval in order to become part of the SIP and thus satisfy the requirements of the federal Clean Air Act for purposes of federal enforcement. If EPA approval is required, the WVMA requests that the Commission utilize Series 13 permits for

modification rather than administrative orders as the administrative mechanism to approve individual RACT compliance plans. Presumably, a Series 13 permit for modification would not require EPA approval to become part of the SIP. The WVMA recognizes that this change would require a corresponding revision to the Series 13 definition of the term "modification." Presently, the term "modification" is defined in Series 13 to include only those physical changes or changes in operations of direct affected sources which increase emissions from existing sources or result in new discharges. The definition of "modification" would have to be revised to include changes to direct affected sources made for the purpose of complying with Series 21 regardless of whether the changes would increase or decrease emissions. This limited revision to Series 13 would be justified on the basis that utilization of the Series 13 permit provision as the mechanism for approval of individual compliance programs would negate the need for EPA approval of each compliance program as a revision to the SIP.

Thus, if the individual compliance programs submitted by regulated sources under Section 9.1 will require EPA approval in order to satisfy the requirements of the federal Clean Air Act for purposes of federal enforcement, Section 9.1 should be revised to read as follows:

> Compliance Programs and Schedules - For sources which as a result of this regulation are required to make major process changes and/or major capital expenditures, as

> determined by the Commission, an application for a permit to modify under Series 13 of the Commission's regulations shall be submitted to the Commission by the owner and/or operator of such source within 180 days of the effective date of this regulation which proposes an acceptable program to comply with the requirements of this regulation. The application for a Series 13 permit to modify shall include the dates for ordering, receiving, installation, and start-up of necessary equipment. All such applications for permits to modify shall be approved as provided in Series 13. The compliance program submitted as part of the application for the Series 13 permit to modify shall provide for the implementation of required measures as expeditiously as practical, but no later than May 31, 1995. Permit modifications shall be issued only after notice to the public. All such permit modifications shall contain a schedule and timetable for compliance, including increments of progress which will require compliance with the applicable requirements as expeditiously as practicable.

Section 9.4 of the proposed regulation should be revised to state that "after the effective date of this regulation, no person shall construct or modify any source subject to this regulation without first obtaining under Series 13 a permit for such construction or modification." In addition, Section 2.8(a) of Series 13 should be revised to state as follows:

> Direct Affected Source Modification - Shall mean any physical change in, or change in the method of operation of, an existing direct affect source which is made to comply with the Reasonable Available Control Technology requirements for existing sources pursuant to Series 21 of these regulations, or which increases the amount of any discharge from such source or results in any new discharge from such existing source for which the Commission has promulgated an emission or ambient air quality standard . . .

5. **The requirements of Series 21 should be coordinated with the requirements of Title III of the Clean Air Act Amendments, Series 25 and Series 27 of the Commission's regulations, the federal air emissions under RCRA, and the federal NSPS regulations.**

EPA is expected to promulgate regulations in November, 1991 under Title III of the CAAA covering fugitive emissions from equipment used in process units at synthetic organic chemical, polymer, and resin manufacturing facilities. Federal regulations covering, along with air oxidation processes in the SOCMI category, the manufacturer of high-density polyethylene, polypropylene, and polystyrene resins will follow. Industries in West Virginia will be required to implement the compliance programs submitted under Section 9.1 of Series 21 well before the federal regulations under Title III of the CAAA become final and are subsequently incorporated by the Commission into Series 27 of the State regulations. Thus, some mechanism must be incorporated into Series 21 to allow industries which later become regulated under the Title III requirements to reconcile their obligations under Series 21 with their obligations under Title III of the CAAA. In addition, the requirements of Series 21 should be coordinated to the greatest extent possible with the present requirements of Series 25 and Series 27 of the Commission's regulations, with the federal air emissions standards promulgated under RCRA, and with the federal NSPS.

RECOMMENDATION

A provision should be added to Section 9 of the proposed regulation to state that, upon promulgation of regulations by EPA under Title III of the CAAA, a regulated source may request that the Commission reconsider the terms and conditions of the compliance program submitted and approved under Section 9.1 in order to reconcile the terms of the source's compliance program with any inconsistent or contradictory requirements imposed under Title III of the CAAA. In addition, the standards and monitoring, recordkeeping, and reporting requirements imposed under Series 21 should generally be coordinated with the standards and monitoring, recordkeeping, and reporting requirements of Series 25 and Series 27 of the Commission's regulations, with the federal air emissions standards promulgated pursuant to RCRA, and with the federal NSPS in order to eliminate contradictory or duplicative requirements.

6. **The regulation should indicate that sources implementing MACT or early reductions to receive MACT extension should be seeking sufficient for purposes of the RACT standards of Series 21.**

Presumably, facilities which implement MACT or seek MACT extensions under Title III of the CAAA through early reductions of hazardous air pollutants would not be required to also comply with RACT standards applicable to the various categories of sources addressed under the proposed rule. However, the proposed regulation does not presently address facilities seeking early reductions of hazardous air pollutants.

RECOMMENDATION

A provision should be added to Section 3 indicating that "the requirements of this regulation do not apply to sources implementing MACT or receiving MACT extensions under Title III of the federal Clean Air Act Amendments of 1990 due to early reductions of emissions." Provisions should also be added to Sections 37.1, 38.1, 39.1, and 40.1 stating that "the requirements of this Section do not apply to sources implementing MACT or receiving MACT extensions under Title III of the federal Clean Air Act Amendments of 1990 due to early reductions of emissions."

7. **Section 40 should be deleted in its entirety.**

Of all the provisions in the proposed rule, Section 40 will have the most dramatic impact on the greatest number of West Virginia facilities. Section 40 addresses only sources that previously were not covered under either the state VOC regulations or the federal NSPS. RACT has not been defined for these sources. The financial burden imposed by Section 40 is compounded by the fact that coating sources whose emissions are below the 100 ton applicability threshold of Section 40.1.a are still subject to the certification, recordkeeping, and reporting requirements of section 4 of the proposed regulation. See Section 40.4.a. Exempt non-coating facilities may choose to remain subject to the standards of Section 40.2 of the regulations, depending on the effect of Section 8. See Comment No. 3 of the General Comment Section (page 8).

At the same time, many sources caught under Section 40 are already regulated under Series 25 and Series 27 of the Commission's regulations and the federal emission standards established under RCRA. These sources will be subject to further regulation upon promulgation of EPA's regulations under Title III of the CAAA. Thus, there is no need for Commission to create a broad "catch-all" provision such as Section 40 of the proposed rule.

RECOMMENDATION

The WVMA requests that the Commission delete Section 40 in its entirety. If the Commission is convinced that Section 40 must be included in the proposed rule to obtain SIP approval, Section 40 should be revised to insure that it is consistent with, and, to the greatest extent possible, does not overlap the recordkeeping and reporting requirements of Series 25 and 27 of the Commission's regulations, the federal emission standards promulgated under RCRA, and the requirements of Title III of the Clean Air Act Amendments of 1990. Coating operations emitting less than the 100 ton applicability threshold of Section 40.1.a should not be subject to the certification, recordkeeping, or reporting requirements of Section 4.2 (under Section 40.4.b of the proposed rule). Exempt non-coating operations should not be penalized under Section 40.4.b.2 for failure to provide the particular documentation requested by the Director where the non-coating operation can otherwise demonstrate that it falls below the 100 ton applicability threshold.

8. **Inconsistent use of the terms "facility," process unit," and "source" should be corrected.**

A number of the standards and requirements set forth in various sections of the proposed rule apply on a facility-wide basis, while others apply on a source-specific, process unit-specific, or production line-specific basis. For example, Section 6 and Sections 10 through 20 apply to owners or operators of coating lines or operations; Sections 4, 5.3, 9, 21, 22, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 37, and 38 apply on a source-specific or process unit-specific basis; Sections 8, 5.1, 5.2, 23, 35, 36, 39 and 40 apply to facilities. The fact that some standards and requirements of the proposed regulation apply on a facility-wide basis, while others apply on a process unit-specific or source-specific basis results in the creation of ambiguities where the regulatory provisions of a given section cross-reference or otherwise impact other sections of the proposed regulation. For example, Section 5.3.b states that up-to-date records of equipment parameters that are specified in other sections of the proposed regulation must be kept for all non-coating sources. The requirements of Section 40, however, apparently apply on a facility-wide basis. Ambiguities are also created within a single section of the proposed regulation where some requirements of a given section apply on a facility-wide basis while others apply on a process unit-specific or source-specific basis. For example, the first sentence of Section 40.1.a states that Section 40 applies to "any facility that emits volatile organic compound (VOC) and is not

subject to sections 10 through 39." The second sentence of Section 40.1.a then states that "a facility is subject to this section 40 if it has a source or sources not regulated by the sections listed above . . . ." It is possible that a single facility, as defined under Section 2.27 to include all pollutant-emitting activities located on one or more contiguous or adjacent properties under common control, could contain some sources covered under Sections 10 through 39 and other sources not covered under Sections 10 through 39. In such a situation, the first sentence of section 40.1.a indicates that the entire facility is exempt from regulation under Section 40, while the second sentence indicates that the entire facility (including sources regulated under sections 10 through 39) is subject to regulation under Section 40.

In addition, the terms "facility," and "source" are not used throughout the proposed regulation in a manner consistent with their general definitions. For example, the term "facility" is defined in Section 2.27 as "all of the pollutant-emitting activities that are located on one or more contiguous or adjacent properties and are under the control of the same person (or person under common control); in Section 39.1, however, the term "facility" refers to various combinations of air oxidation reactors. Similarly, the term "source" is sometimes used to refer to the specific equipment or installation from which VOC emissions emanate, while at other times "source" is used in a more broad sense to encompass the terms "process unit" and "facility." It is

also noted that the proposed rule fails to define the term "process unit" in Section 2.

As a result of the alternating and inconsistent use of these terms, it is often impossible to determine whether a given standard or requirement is intended to apply to all VOC emissions at a given facility or to emissions from specific sources or process units within the facility.

RECOMMENDATION

The terms "facility," "process unit" and "source" should each be used consistently throughout the regulations. The term "process unit" should be defined consistently with the definition of "chemical processing unit" found in Section 2.4 of Series 27 of the Commission's regulations to state that "process unit" means an assembly of reactors, tanks, distillation columns, heat exchangers, vaporizers, compressors, dryers, decanters, and/or other equipment used to treat, store, manufacture, or use VOCs.

The standards and requirements of the proposed rule should apply on a source-specific or process unit-specific basis, i.e., only to emissions from the specific process unit or source generating the regulated emissions. Standards of the proposed rule should not apply to emissions within a facility which are unrelated to regulated process units or sources. Where emission standards are expressed as percentage reductions of potential emissions, however, owners and operators should be granted the option to "bubble" emissions from multiple process units located at the same

facility for purposes of determining compliance. Monitoring, recordkeeping, reporting, and certification requirements should apply only to emissions from process units or sources subject to the particular standard, and not to emissions of VOCs within a facility which are unrelated to the process units or sources subject to the particular standard.

III. SPECIFIC COMMENTS

1. Section 2 (Page 1) - Definition of "modified source" should be added to General Definition Section.

The proposed regulation does not define the term "modified source." The Applicability section of the proposed regulation at Section 3.1 states that "all new and modified sources shall meet any applicable state or federal rules for existing sources."

RECOMMENDATION

A general definition of the term "modified source" should be provided in Section 2 of the proposed regulation, and should be consistent with the definition found in Section 2.12 of Series 27 of the Commission's regulations, which states that the term "modification" or "modified" means any physical change or change in the method of operation of a processing unit which increases its potential to emit pollutants, in this case VOCs.

2. **Section 2 (Page 2) - General definition for term "In VOC Service)" should be added to Section 2.**

The term "in VOC service" is defined in Sections 26.2(e), 29.2(m), and 37.2(f) as meaning that "the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight." This definition should be included in Section 2 of the proposed regulation. Section 37.1.a.1, which states that "a piece of equipment is not in VOC service if the VOC content of the process fluid can never be reasonably expected to exceed 10 percent by weight" should be deleted, since it implies that the test for whether a piece of equipment is in VOC service is whether the process fluid can ever be reasonably expected to exceed 10 percent by weight, and not whether the process fluid actually exceeds 10 percent VOCs by weight.

RECOMMENDATION

The term "In VOC Service" should be defined in Section 2 of the regulation. Section 37.1.a.1 should be deleted.

3. **Sections 2.54 and 2.60 (Page 7) - Meanings of terms "shutdown" and "process unit shutdown" should be clarified.**

The term "shutdown" is defined in Section 2.60 as the cessation of operation of a facility or of its emission control or emission monitoring equipment. The term "process unit shutdown" is defined in Section 2.54 as an unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for at least 24 hours. Thus, the

definitions appear to potentially overlap in instances where a process unit is shut down for over 24 hours. It is not clear whether the term "shutdown" applies only to the permanent cessation of operations, or whether shutdowns due to "batch operations," where a manufacturer stops making a product for a period of months then starts making the product again, are within the scope of the term "shutdown." In addition, the term "process unit" is not defined. Clarification of these points are important in a number of situations, including the determination of whether sources will receive credit for reductions in emissions from cessation of operations.

RECOMMENDATION

The Section 2.60 definition of "shutdown" should be clarified to indicate that it applies to the permanent cessation of operations. The regulations should also indicate whether "batch operations" are considered a shutdown (i.e., a permanent cessation of operations) or a process unit shutdown for purposes of the regulations. In addition, the term "process unit" should be defined in Section 2 as described previously in Comment 8 of the General Comments (Page 20) so that a distinction may be drawn between the term "process unit shutdown," which applies only to the process unit, and "shutdown," which applies to the entire facility.

4. **Section 2.55 (Page 7) - RACT should not be defined solely in terms of control technologies.**

Section 2.55 defines RACT as "the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available. . . ." (emphasis supplied). This language may be construed as limiting RACT to the application of technology, i.e., control equipment. Under the approach taken in the Clean Air Act and in CTGs issued by EPA, however, the concept of RACT is stated more broadly to included control measures other than control equipment. This approach is consistent with the approach taken under the federal PSD program, where the term "Best Available Control Technology" is defined to include the application of "production processes and available methods, systems, and techniques. . . ." Clean Air Act Section 169(3). This approach is also consistent with the approach taken in Section 2.3 of Series 27 of the Commission's regulations, where the term "Best Available Technology" is defined to include process changes, substitution of materials, treatment, work practices, and operational methods.

RECOMMENDATION

Section 2.55 should be revised to indicate that the term "RACT" is not limited to control equipment, incorporating the approach of Series 27 regarding the definition of "BAT" and state as follows:

> 2.55. "Reasonably Available Control Technology" (also denoted as "RACT") means the lowest emission limit that a particular source

is capable of meeting by the application of control measures that are reasonably available considering technological and economic feasibility. RACT measures shall include, but not be limited to, measures which:

a. reduce or eliminate the emission rate of VOCs through process changes or substitution of materials;

b. enclose or seal equipment or systems to reduce or eliminate VOC emissions;

c. collect, capture, destroy, and/or otherwise treat VOC emissions from a process, stack, storage, or fugitive emission point;

d. are work practices or operational methods; and

e. require technology that has been applied to similar, but not necessarily identical, source categories.

5. **Section 2.76 (Page 9) - Definition of VOC should incorporate minimum vapor pressure.**

The definition of VOC should contain some minimum vapor pressure under which a compound will not be subject to regulation. Liquids having a vapor pressure of 0.3 kPa (0.044 in Hg) at 20°C (68°F) are excluded from regulation under the definition of "in light liquid service" found in Sections 26.2.c, 29.2.e, and 37.2.c.

RECOMMENDATION

The 0.3 kPa standard should be incorporated in the definition of VOC found at Section 2.76.

6. **Sections 4.2 (Page 12); 10.1.d (Page 27); 11.1.b (Page 31); 12.1.b (Page 34); 13.1.b (Page 36); 14.1.b (Page 38); 15.1.b (Page 40); 16.1.b (Page 42); 17.1.b.1 (Page 44); 18.1.b (Page 47); 19.1.d (Page 49); 20.1.b.1 (Page 54); 34.1.a (Page 126); and 40.1.a (Page 182) - Applicability threshold should not be determined in absence of control devices.**

Numerous sections of the proposed rule state that applicability thresholds must be determined in the absence of control devices. See, e.g., Sections 10.1.d; 11.1.b; 12.1.b; 13.1.b; 14.1.b; 15.1.b; 16.1.b; 17.1.b.1; 18.1.b; 19.1.d; 20.1.b.1; 34.1.a; and 40.1.a. The requirement that applicability thresholds be determined in the absence of control devices is without precedent in other provisions of the state and federal air programs. Determinations of whether facilities fall below applicability thresholds are made with control devices in place under Series 13 and Series 14 of the Commission's regulations and the federal PSD and NSPS requirements. By determining applicability thresholds in the absence of control devices, the Commission removes much of the incentive to meet the requirements of the proposed rule through the implementation of new and innovative technology, and greatly broadens the scope of the rule.

RECOMMENDATION

The WVMA requests that all applicability thresholds be determined with control devices in place, since it is a source's potential to emit with control devices in place which determines, and is thus a true indication of, a source's potential to emit. The Director may determine through compliance inspections whether

sources have subsequently removed control devices, and may subject owners or operators of such sources to enforcement action.

7. **Section 5.1 (Page 19) - Initial compliance certification should be limited to registration of sources.**

Under Section 5.1 of the proposed regulation, owners and operators of non-coating sources must submit to the Director an initial compliance certification within 6 months of the effective date of the proposed regulation, while owners or operators of new non-coating sources must submit the initial compliance certification upon start-up of the new facility. Title I of the CAAA contains no similar provision requiring initial compliance certification. Title VII of the CAAA requires the EPA Administrator to promulgate rules regarding submission of compliance certification within 2 years of enactment of the amendments, i.e., November 15, 1992. The Commission should wait until EPA has published such guidance before establishing compliance certification requirements. The requirement otherwise makes no sense since existing sources will be implementing compliance programs and could not so certify compliance within 6 months.

In addition, there is no apparent reason why non-coating sources are granted only 6 months from the effective date of the regulation to submit the initial compliance certification. Under Sections 4.2.a, 4.3.a, 4.4.a, and 4.5.a of the proposed regulation, coating sources are granted 12 months from the effective date of

the regulation to submit the initial compliance certification. Non-coating sources should be granted the same 12 month period.

The WVMA also notes that the initial compliance certification requirements of Section 5.1 go well beyond what is necessary to insure that RACT is implemented. Section 9.1 of the proposed regulation already requires sources to submit a compliance program for the Commission's approval which specifies the dates for ordering, receiving, installation, and start-up of necessary equipment. At most, Section 5 should require sources to register as being covered under Series 21 and to file a statement certifying that a compliance program application has been submitted for the Commission's approval. This certification should be required 12 months after the effective date of the regulation, the same timeframe as granted coating sources under Sections 4.2.a, 4.3.a, 4.4.a, and 4.5.a. The Director may then determine whether approved compliance programs have been implemented through inspections.

RECOMMENDATION

Section 5.1 should be revised to state as follows:

> Initial Registration - The owner or operator of any facility containing sources subject to this regulation shall submit to the Director an initial registration within twelve (12) months of the effective date of this regulation stating that such sources are subject to the provisions of this regulation. The owner or operator of any new or modified facility containing sources that become subject to this regulation after the effective date of this regulation shall obtain a permit therefore prior to start-up or modification of the affected facility. For existing sources, such registration must contain a certification

that a compliance program has been developed and submitted for the Commission's approval as required under Section 9.1 of this regulation, or a demonstration that the source already has implemented RACT.

8. **Section 5.2 (Page 20) - Reporting requirement of Section 5.2 should be limited to releases in excess of numerical emission standards.**

Section 5.2 of the proposed regulation requires owners or operators of non-coating sources to report occurrences of excess emissions expected to last more than seven days. It is unclear from the wording of this provision what is intended to constitute "excess emissions." The reporting requirement should be limited to emissions in excess of numerical limitations imposed under a source's permit.

RECOMMENDATION

Section 5.2 should be revised to read as follows:

> Reports of Excess Emissions - Except as provided in Section 9.3, the owner or operator of any facility containing sources subject to this regulation shall, for each occurrence of emissions of a volatile organic compound in excess of numerical emission limitations set in the source's permit which is expected to last more than 7 days, supply the Director by letter with the following information within one business day of becoming aware of such occurrence:
>
> a. the name and location of the facility;
> b. the subject sources that caused the excess emissions;
> c. the time and date of first observation of the excess emissions;
> d. the cause and expected duration of the excess emissions;

e. the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and

f. the proposed corrective actions and schedule to correct the conditions causing the excess emissions.

9. **Section 5.3 (Page 20) - Testing of control equipment should not be required prior to start-up for changes at existing sources.**

Section 5.3 of the proposed regulation is not clear in stating the timeframe required for the certification of initial compliance of control equipment at existing sources. Section 5.3. states that "by one year of the effective date of this regulation, or upon start-up of a new source, or upon change in the method of compliance for an existing source," the owner or operator shall perform and submit to the Director all tests and calculations necessary to demonstrate the subject source will be in compliance with the requirements of the regulation within one year of the effective date. The phrase "by one year from the effective date of this regulation" would appear to give existing sources one year in which to conduct and submit the required tests and calculations. However, the phrase "upon changing the methods of compliance for an existing source" could be construed as requiring tests and calculations to be submitted prior to implementing changes in the method of compliance for existing sources. The number of existing sources subject to RACT requirements will dramatically increase

under the new regulation. It is expected that most of these existing sources will be required to adopt new methods and implement new technologies in order to comply with Series 21. Section 5.3 should clearly state these existing sources will have a specified amount of time in which to conduct tests and submit the necessary data to the Director to demonstrate compliance with the control plan or method.

RECOMMENDATION

The phrase "or upon changing the method of compliance for an existing source" should be deleted from Section 5.3, and the application of this section should be clarified.

10. Section 5.3.b.1 (Page 20) - Continuous recordkeeping requirement should be abandoned.

Section 5.3.b.1 requires owners or operators of non-coating sources to maintain up-to-date, readily accessible continuous records of any equipment operating parameters required to be monitored under Series 21. It is not clear what the Commission intends by use of the word "continuous" in this provision. For some parameters, "continuous" monitoring in the strict sense is not possible. It is also unclear whether computer logging of a parameter on a routine basis, e.g., every five seconds, would be deemed "continuous" monitoring for purposes of this section. Use of the term "continuous" implies that no allowance is contemplated for monitoring equipment failure. In addition, the WVMA is also concerned that the Commission is unaware of the complexities of

monitoring the emissions from a batch operation. The WVMA believes that it is important that the Commission's regulations explicitly recognize that engineering calculations and production records are a valid means of determining compliance and in many cases may be the preferred or only method.

The intent of all stack sampling is to remove, measure, and analyze a small but representative sample stream from a larger source gas stream without in any way modifying the operation of the source system as a result of the sampling. Stack sampling techniques are not appropriate to most batch plant emissions for a number of reasons.

EPA in its 1978 RACT document, "Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products" (at 2-4), states:

> Common methods are sampling and analysis of vent streams, material balance, and theoretical calculation. Many vents are neither easily nor inexpensively sampled, and in some instances material balances will not be satisfactory. Therefore, theoretical evaluations may have to be conducted.

EPA's conclusion is based on consideration of the nature of batch processing. A typical batch cycle will include multiple discrete steps, each of which has its own distinct emission characteristics. A common set of bath cycle steps include:

> (1) Some procedure to displace the oxygen in the reaction vessel by a non-combustible gas, often by pressuring the vessel with nitrogen, bleeding the pressure, repressurizing and depressurizing until the oxygen content is sufficiently diluted with nitrogen, sometimes

by continuously purging the system with a flow of an inert gas at a low flow rate (typically in the rate of 0.5 CFM to 5 CFM).

(2) Pumping or otherwise inducing the flow of one or more liquids into a vessel. To expedite the process time cycle, the flow rates are usually sized to minimize the time lost in vessel filling, with times normally in the 10 to 20 minute range.

(3) Processing and adjustment, which may include heating, cooling, pressurizing, vacuum, addition and/or removal of ingredients, etc. During these steps, reactants and other ingredients are being consumed while products are being generated. As a result, composition of any gas stream is constantly changing. Heat generated or consumed by the reaction poses still another set of analytical variations too challenging to measure reproducibly. And no reaction ever runs exactly the same from batch to batch.

(4) Transfer from the reactor vessel and/or packaging, which may involve many different types of equipment and handling conditions from batch to batch, even for the same product.

Varying system conditions often occur within each batch cycle step:

(1) The most common varying system condition occurs during a vessel heat-up or cool-down. As the contents rise or fall in temperature, each of the emission characteristics changes with time (i.e., the temperature, the partial pressures, the mole fractions in the gas phase and in the liquid phase, the volume of gas displaced, its flow rate and its composition). The flow rate due to displacement caused by vapor generation as a result of increasing vapor pressures will normally be in the range of less than 1 CFM, which is too low to measure directly. Furthermore, as the temperature increases, the vapor pressures increase and the displacement rate increases. The latter two decrease as temperature decreases. Thus, the flow rate is not constant and could not be measured.

(2) Other steps (such as displacement due to filling a vessel) will have an actual variation but, for purposes of emission estimates, are assumed to be constant. The assumption is made that all of the vapor displaced is saturated with the chemical of concern, an assumption that is conservative but nonetheless acceptable because the emission values are usually so small. Emission calculations use the pumping rate as equivalent to the gas flow rate. For example, if a vessel is filled at a pumping rate of 20 gallons per minute for 10 minutes and the volume of gas displaced is 200 gallons or 27 cubic feet, the gas flow rate is then 2.7 cub feet per minute. In a reasonably sized stack, this flow would be too low to be measured with a pilot tube. In addition, the time period of the emission would be too short to do reproducible traverse and temperature determinations.

RECOMMENDATION

We do not believe it is the intent of the Commission that every source has to install continuous emissions monitoring on every stack, vent, etc. Such an approach would be devastating to small batch manufacturers from both a financial and an operational perspective. For these reasons, the WVMA requests that the term "continuous" be deleted from the recordkeeping requirement of Section 5.3.b.1 of the regulations.

11. Section 9.3 (Page 25) - Variance of Section 9.3 should extend to necessary repairs.

Section 9.3 of the proposed regulation provides for a variance where the requirements of the regulation cannot be satisfied due to the unavoidable malfunction of equipment, but does not provide for a variance during necessary repairs. Equipment must be maintained

in order to minimize the occurrence of more serious malfunctions. The omission of a provision allowing increased emissions during necessary repairs would frequently necessitate the shutdown of operations during such repairs, imposing an undue hardship on industry in the State.

RECOMMENDATION

The WVMA requests that Section 9.3 be revised to state as follows:

> If the provisions of this regulation cannot be satisfied due to repairs made as the result of routine maintenance or in response to the unavoidable malfunction of equipment, the Director may permit the owner or operator of a source subject to this regulation to continue to operate said source for periods not to exceed 10 days upon specific application to the Director. Such application shall be made prior to the making of repairs and, in the case of equipment malfunction,within 24 hours of the equipment malfunction . Where repairs will take in excess of 10 days to complete, additional time periods may be granted by the Commission. In cases of a major equipment failure, additional time periods may be granted by the Commission provided a corrective program has been submitted by the owner or operator and approved by the Commission. During such time periods, the owner or operator shall take all reasonable and practicable steps to minimize VOC emissions.

12. Section 9.4 (Page 26) - Regulation should authorize the use of general permits.

The proposed regulation does not include Commission authority to develop general permits for sources of similar nature which would be governed by substantially identical permit conditions due

to similarity of operations. As discussed above, the proposed VOC regulations dramatically increase the number of sources subject to limitations on VOC emissions. By utilizing general permits where possible, the Commission can significantly decrease the administrative burden created by the regulation of at least some of these newly regulated sources.

RECOMMENDATION

The WVMA requests that the proposed regulation be revised to grant the Director authority to develop and issue general permits by adding the following provisions at the end of Section 9.4 of Series 21 and to Section 4.1 of Series 13 of the Commission's regulations:

> The Director may, where appropriate, issue general permits, after public notice and comment, covering categories of sources which would require the same or similar measures to comply with the requirements of these regulations and which would be subject to the same or similar permit conditions. Sources covered by such general permits are required to be registered with the Commission within 90 days of the effective date of such a permit in order to be subject to the permit. Failure to so register will not excuse the owner or operator of the source from its obligation to comply with these regulations or to obtain an individual permit instead.

13. **Sections 10.1.d (Page 27); 11.1.b (Page 31); 12.1.b (Page 34); 13.1.b (Page 36); 14.1.b (Page 38); 15.1.b (Page 40); 16.1.b (Page 42); 17.1.d (Page 44); 18.1.b (Page 47); 19.1.d (Page 49); 20.1.d (Page 54); 21.1.b.2 (Page 64); 34.1.a (Page 126); and 40.1.d (Page 182) - Once-in-always-in provision should be deleted and replaced with mechanism for certifying exemption.**

A number of provisions of the proposed rule indicate that facilities which exceed the stated applicability thresholds at any time after the effective date of the regulation remain subject to regulation even if emissions later fall below the applicability thresholds. See e.g. Section 10.1.d; 11.1.b; 12.1.b; 13.1.b; 14.1.b; 15.1.b; 16.1.b; 17.1.d; 18.1.b; 19.1.d; 20.1.d; 21.1.b.2; 34.1.a; and 40.1.d. Sources implementing process changes which reduce potential emissions below applicability thresholds should not continue to be subject to regulation on the basis that the process changes occur after the effective date of the regulation. For example, a source that substitutes water-based agents in place of solvents in a manufacturing process and thus falls below the 100 ton applicability threshold of Section 40.1.a should not be subject to continued regulation under Section 40.1.d.

RECOMMENDATION

The WVMA requests that these "once-in-always-in" provisions be deleted and replaced with provisions requiring such sources to annually certify that emissions do not exceed the relevant applicability threshold.

14. **Section 22.2.h (Page 68) - Monthly inspection of vapor collection system, vapor control system, and loading racks at bulk gasoline terminals is too frequent.**

Section 22.2.h requires the monthly inspection of the vapor collection system, the vapor control system, and each loading rack handling gasoline for total organic compounds or vapor leaks. The monthly inspection requirement is an unnecessary administrative burden for bulk gasoline terminals which are properly operated under the requirements of Section 22.

RECOMMENDATION

Inspection should be required on a semi-annual basis. At most, a quarterly inspection should be required.

15. **Section 23.1 (Page 73) - Implementation of Stage I vapor recovery should apply only to commercial gasoline dispensing facilities.**

Section 23.1.a requires Stage I vapor recovery systems to be installed at all gasoline dispensing facilities, stating that "this Section 23 applies to any gasoline dispensing facility . . . ." By analogy, Section 182(b)(3)(A) of the Clean Air Act imposes Stage II vapor recovery requirements only on commercial gasoline dispensing facilities, stating that "this subparagraph shall apply only to facilities which sell more than 10,000 gallons of gasoline per month (50,000 gallons per month in the case of an independent small business marketer of gasoline as defined in Section 325)." (emphasis supplied). The scope of the Stage I vapor recovery standards should be no greater than the scope of the Stage II vapor

recovery standards. Stage I vapor recovery requirements should be limited to commercial gasoline dispensing facilities. Section 23.1.c should be revised to incorporate the exemptions of Clean Air Act Section 182(b)(3)(A) for gasoline dispensing facilities which sell 10,000 gallons of gasoline or less per month and independent small business marketers of gasoline selling 50,000 gallons of gasoline or less per month.

RECOMMENDATION

Section 23.1.a should be revised to state that "this Section 23 applies to any commercial gasoline dispensing facility (and the appurtenant equipment necessary to a gasoline dispensing facility) which sells more than 10,000 gallons of gasoline per month (50,000 gallons per month in the case of an independent small business marketer of gasoline)." In addition, Section 23.1.c should be revised to state that "Any gasoline dispensing facility with a throughput of less than 38,000 L. (10,000 gal.) per month is exempt from the requirements of this regulation."

16. **Section 23.3 (Page 74) - Records should be made available within a reasonable time of request, not "immediately."**

This provision requires owners and operators of gasoline dispensing facilities to keep records of the quantity of gasoline delivered to a site in a readily accessible location and to make such records available to the Commission immediately upon verbal or written request. It is not clear what the Commission intends by use of the word "immediately" in this provision. For example, it

is not clear whether a full-time guardian of delivery records would be required under the proposed regulation. It should be enough that the records are maintained at a readily accessible location and made available in a reasonable amount of time.

RECOMMENDATION

The WVMA requests that the word "immediately" be deleted from Section 23.3.

17. **Section 30.1 (Page 102) - Exemption should extend to cold cleaning facilities utilizing cleaning baths.**

Section 30.1.a exempts open-top vapor degreasing operations with an open area smaller than one square meter from certain standards. Section 30.1.b exempts conveyorized degreasers with an air/vapor interface smaller than two square meters from the standards of Section 30.3.c.2. These exemptions should extend to all standards of Section 30.3, the test methods of Section 30.4, and the recordkeeping requirement of Section 30.5. In addition, an exemption should be provided for cold cleaning facilities which utilize cleaning baths of less than one square meter.

RECOMMENDATION

Section 30.1. should be revised to state as follows:

Applicability -- This section 30 applies to all solvent metal cleaning sources with the following exceptions:

a. Any open top vapor degreasing operation with an open area smaller than 1 square meter (m^2) (10.8 square feet [ft^2]);

b. Any conveyorized degreaser with an air/vapor interface smaller than 2.0 m^2 (21.5 ft^2); and
c. Cold cleaning facilities utilizing cleaning baths with an open area of less than one m^2 (10.8 ft^2).

18. **Section 34.1 (Page 126) - Exemption from certification, recordkeeping, and reporting requirements should be created for small printing operations.**

Section 34.1.a subjects graphic art systems whose maximum theoretical emission of VOCs from all printing presses are greater than or equal to 100 tons per year to the standards of Section 34. Graphic art systems whose emissions are below the 100 ton applicability threshold must still comply with the certification, recordkeeping, and reporting requirements of Section 34.7.a.

RECOMMENDATION

Section 34.1.a should be revised to exempt graphic art systems whose emissions are below the 100 ton applicability threshold from the certification, recordkeeping, and reporting requirements of Section 34.7.a. If this revision is not made, a separate applicability threshold should be provided for purposes of the certification, recordkeeping, and reporting requirements of Section 34.7.a. Small printing operations with emissions of less than fifty tons per year should be exempted from Section 34.7.a.

19. **Section 37.1 (Page 149) - Exemption for pumps and valves in heavy liquid service should be incorporated in Section 37.1.**

The provision covering fugitive emissions from petroleum refinery sources specifically excludes leaks from pumps and valves in heavy liquid service. See Section 26.1.b.5. This exclusion should be extended to Section 37.1 (Leaks From Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment).

RECOMMENDATION

Section 37.1 should be revised by adding Paragraph 37.1.d to read as follows:

> The requirements of this section do not apply to pumps and valves in heavy liquid service, except that if evidence of a leak is found by visual, audible, olfactory, or other detection method, the owner or operator must confirm the presence of a leak using the method specified in Section 46. If a leak is confirmed, the owner or operator must repair the leak as specified in Section 37.7.

20. **Section 37.1.b (Page 149) - Exlusion should apply to process unit rather than facility.**

Section 37.1.b states that "This Section 37 does not apply to any synthetic organic chemical, polymer, or resin manufacturing facility whose annual design production capacity is less than 1,000 megagrams (Mg) (1,100 tons) of product." (emphasis supplied). The NSPS states that this exemption should apply to synthetic organic chemical, polymer, or resin manufacturing process units whose annual design value is less than 1,000 mg of product. See 40 C.F.R. §60.480(d)(2).

RECOMMENDATION

Section 37.1.b should be revised to state "This Section 37 does not apply to any synthetic organic chemical, polymer, or resin manufacturing production unit whose annual design production is less than 1,000 megagrams (Mg) (1,100 tons) of product.

21. Section 37.4.e (Page 151) - More flexibility should be allowed in tagging leaks.

Section 37.4.e requires owners or operators to affix tags to each leak detected. This provision imposes a single approach to the identification of leaks which have been detected. The federal New Source Performance Standards of 40 C.F.R. Part 60, Subpart VV (Equipment Leaks of VOCs in the Synthetic Organic Chemicals Manufacturing Industry) do not require the tagging of all detected leaks. Instead, the NSPS requires only that leaks be repaired within a certain period of time, i.e., generally 15 days.

RECOMMENDATION

Section 37.4.e should be revised to require only that a system for the identification and repair of leaks after detection be implemented.

22. Section 40.1 (Page 182) - Exemption for pilot facilities should be included.

Section 40.1 should be revised to include an exemption for pilot facilities. This exemption should be limited only to those pilot facilities which in practice function as experimental process

lines or research and development facilities producing developmental quantities of chemicals. Failure to provide this limited exemption would impose significant increases in operating costs on legitimate pilot facilities, thus creating a substantial and often insurmountable disincentive to the production of developmental and specialty chemicals.

RECOMMENDATION

Section 40.1 should be revised to add section 40.1.f, stating as follows: "The requirements of this Section 40 shall not apply to experimental process lines or research and development laboratories." Sections 40.2 through 40.6 should be renumbered as Sections 40.3 through 40.7, respectively. Section 40.2 should be revised to state as follows:

40.2. Definitions. -- As used in this Section 40, all terms not defined herein shall have the meanings given them in Section 2.

a. "Experimental process line" means a chemical manufacturing line with the primary purpose of operating to evaluate chemical manufacturing processes and technologies.

b. "Research and development laboratories" means chemical manufacturing facilities used to produce developmental quantities of chemicals.

23. **Section 40.1.b and 40.1.c (Page 182) - Facilities emitting less than the applicability threshold should not be subject to certification, recordkeeping, and reporting requirements.**

Under Section 40.1.b, owners and operators of exempt coating line operations must still comply with the certification, recordkeeping, and reporting requirements of Section 4.2. The certification, recordkeeping, and reporting requirements represent an undue burden on small businesses that emit nominal amounts of VOCs. Small businesses emitting VOCs in nominal amounts would not necessarily be aware they were even subject to the requirements of Section 4.2. The practical effect of this provision is that small businesses will be required to hire environmental personnel or retain the assistance of environmental consultants to determine whether they must comply with the requirements of Section 4.2, thus negating the purpose of the exemption. It is also noted that Section 4.2.a.4 requires coating facilities to demonstrate that VOC emissions from a representative day at maximum production levels are 6.8 kg or less before application of control devices. This requirement would appear to be in direct conflict with the 5 kg limitation of Section 8.1 of the regulations.

RECOMMENDATION

Facilities emitting less than the 100 ton applicability threshold should not be subject to the certification, recordkeeping, or reporting requirements of Section 4.2 of the proposed rule. Sections 40.1.b and 40.4.a should be deleted. If these sections are not deleted, however, a provision should be

added to exempt facilities emitting less than 50 tons per year of VOCs from the certification, recordkeeping and reporting requirements of Section 4.2.

24. Section 40.1.e (Page 182) - Surface impoundments, incinerators, pits, etc., should be exempted from the requirements of Section 40.

Section 40.1.e excludes coke ovens, fuel combustion, wastewater treatment facilities, and other specified sources from the requirements of Section 40. This section should also exempt surface impoundments, incinerators, and pits from the requirements of Section 40. Like wastewater treatment facilities, surface impoundments, incinerators, and pits are utilized for the treatment, storage, and disposal of materials, including VOC-containing materials, and are thus sources of non-process oriented emissions. The regulation of emissions from these sources would pose an undue hardship on industry, and is not contemplated under the CAAA.

RECOMMENDATION

Section 40.1.e should be revised to read as follows:

> The control requirements of this Section 40 shall not apply to coke ovens (including by-product recovery plants), fuel combustion sources, barge loading facilities, jet engine test cells, vegetable oil processing facilities, wastewater treatment facilities, surface impoundments, pits, incinerators, and iron and steel production.

25. **Section 40.2.a (Page 182) - Baseline year and applicable unit to which the 81 percent reductions apply should be specified.**

Section 40.2.a does not indicate whether the 81 percent emission reductions of that section apply only to the individual sources and process units not covered under Sections 10 through 39, or to the entire facility containing a source or process unit not covered under Sections 10 through 39. Section 40.2.a also fails to indicate whether every source not covered by Sections 10 through 39 will be considered in determining the 100 ton applicability threshold, or whether only the emissions from sources which are part of a process unit not regulated under Sections 10 through 39 will be considered. This section should indicate that the 81 percent reductions apply only to process units that are not regulated under Sections 10 through 39. However, owners or operators should be allowed to accumulate or "bubble" all emissions from process units not covered under Sections 10 through 39 in determining whether the 81 percent reductions have been achieved.

Section 40.2.a also fails to indicate the baseline year for determining emission reductions. Section 182(b)(1)(B) of the Clean Air Act indicates that 1990 should be the baseline year for determining emission reductions. Provision should be made, however, to give credit to facilities that have made voluntary reductions in emissions through major capital expenditures, e.g., installation of an incinerator, within the two-year period prior to the 1990 baseline year.

RECOMMENDATION

Section 40.2.a should be revised to state as follows:

> a. Install and operate emission capture and control techniques, or use complying coatings that achieve an overall reduction in uncontrolled VOC emissions of at least 81 weight percent for each process unit which is not subject to Sections 10 through 39. Provided, that owners or operators may accumulate emissions of all process units not subject to regulation under Sections 10 through 39 for purposes of determining whether the 81 weight percent reductions have been achieved. For purposes of this provision, 1990 will be used as the base year for determining whether the 81 weight percent reductions have been achieved, except that owners or operators installing control equipment between January 1, 1988 and December 31, 1989 shall be given credit for reductions that result from installation of such control equipment.

In addition, Section 40.1.a should be revised to state as follows:

> This section 40 applies to process units that emit volatile organic compounds (VOCs), are not subject to Sections 10 through 39, and are not regulated under Section 40.1.e. A process unit is subject to this Section 40 only if, as a group, the maximum theoretical emissions from process unit(s) which are not subject to Sections 10 through 39 and are not regulated under Section 40.1.e equal or exceed 90.7 megagrams (Mg)(100 tons) per year at a given facility.

26. **Section 41.4 and 41.5 (Page 186) - Timeframes are inadequate to prepare final report on test results.**

Section 41.4 requires the submission of preliminary results of tests within 30 days of sample collection. Section 41.2.d.2 states

that the test plan and quality assurance program must provide for the submission of preliminary test results within 15 days of sampling. Preliminary test results should not be required, as this information is contained in the final test report and there is no compelling reason for a duplicative preliminary reporting. In no event should preliminary test results be required earlier than 30 days after sample collection. Section 41.5 requires submission of the final test report within 45 days of completion of on-site sampling. The 45-day period for submission of final test report is an insufficient timeframe for preparation of the final test report. At least 60 days should be provided for submission of final test reports.

RECOMMENDATION

At a minimum, 60 days should be provided from the date of completion of on-site sampling to submit the final test report required under Section 41.5. Section 41.2.d.2 should be deleted. The Section 41.4 requirement that preliminary results of tests be submitted within 30 days of sample collection should also be deleted.

27. **Section 44.1.b.3 (Page 194) - Clarification is required on whether explicit measure of capture efficiency is required for gas carbon absorbers.**

Section 44.1.b.3 states that explicit measurement of capture efficiency is not required under certain conditions where owners or operators use "a control device designed to collect and recover VOC

(e.g., carbon absorber) . . . ." However, it is not clear whether explicit measurement of capture efficiency is required for gas carbon absorbers.

RECOMMENDATION

This section should be clarified to indicate that both gas carbon absorbers and liquid carbon absorbers are included within this provision.

28. **Section 44.2.b.1 (Page 197) - Continuous monitoring is not possible before and after the carbon absorption bed.**

Section 44.2.b.1 indicates that facilities using incinerator or regenerative carbon absorbers to comply with Section 44 must continuously monitor various parameters, including the VOC concentration of each carbon absorption bed. Section 44.2.b.1.C does not specify whether the VOC concentration must be measured within the carbon absorption bed itself, or before or after the carbon absorption bed. In closed cycle systems, the VOC concentrations would differ dramatically depending upon where the measurement is made. As a practical matter, it may be impossible to measure the VOC concentration on a continuous basis before or after the application of carbon absorption bed technology for all applications. Varying flow rates and concentrations of total VOCs, as experienced with batch type or intermittent type operations, are very difficult to monitor on a continuous basis. Sampling and analytical equipment reliability problems have not been resolved. Intrinsic safety problems have not been solved for some of the

analytical equipment. However, in some cases a specific VOC in a stream may be successfully monitored on a continuous basis and may be used as an indication of the concentration of the total VOCs in a stream.

RECOMMENDATION

Section 44.2.b.1.C should be revised to require only one daily measurement of the VOC concentration before or after the carbon absorption bed in order to determine efficiency. This revision would require that the following changes be made to Section 44.2.b.1:

- The phrase "except as otherwise indicated," should be added at the end of the first sentence of Section 44.2.b.1;
- The term "continuous" should be deleted from the second sentence of Section 44.2.b.1;
- The phrase "continuous monitoring of the" should be added at the beginning of Sections 44.2.b.1.A and 44.2.b.1.B; and
- Section 44.2.b.1.C should be revised to state "Based on site specific conditions, the VOC concentration and flow through each carbon absorption bed should be monitored before and after the carbon absorption bed to determine efficiency."

29. **Section 44.2.b.1.B (Page 197) - Clarification of the phrase "across each catalytic incinerator bed."**

Section 44.2.b.1.B requires continuous monitoring of the temperature rise immediately before the catalyst bed and across each catalytic incinerator bed. It is not clear from the phrase "across each catalytic incinerator bed" whether continuous

monitoring of the temperature rise is required in the incinerator bed or in the discharge following the incinerator bed.

RECOMMENDATION

This provision should be clarified to indicate the points at which the Commission intends to require continuous monitoring of the temperature rise.

30. **Section 45.8 (Page 200) - Test methods should be performed only once per test run.**

This section indicates that when Methods 2, 2A, 2C, 2D, 3, 3A, and 4 of 40 C.F.R. Part 60, Appendix A are required to be performed to determine the efficiency of a fixed-bed carbon absorption system, the test method must be performed at least twice during each test run. Under Appendix A of 40 C.F.R. Part 60, it is contemplated that Methods 2, 2A, 2C, 2D, 3, 3A, and 4 should be run only once during each test run.

RECOMMENDATION

The WVMA requests that the phrase "at least twice during each test run" be deleted from Section 45.8.

IV. CONCLUSION

The WVMA expresses its appreciation to the Commission for this opportunity to offer our input on the proposed Series 21 regulation. Please contact Robert L. Foster at 747-3406 with any questions or comments.

Respectfully submitted this 12th day of September, 1991.

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WEST VIRGINIA DEPARTMENT OF
COMMERCE, LABOR & ENVIRONMENTAL RESOURCES
AIR POLLUTION CONTROL COMMISSION

COPY

IN RE: Public Hearing on Proposed Regulation 21 (45CSR21) - Regulations to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds

TRANSCRIPT OF PROCEEDINGS had and/or testimony adduced in the hearing held before the West Virginia Air Pollution Control Commission in the Conference Room at 1558 Washington Street, East, Charleston, West Virginia, on the 12th day of September, 1991, commencing at 9:15 a.m.

APPEARANCES:
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CREDE DOUGLASS, Vice Chairman
CLEVE BENEDICT
JEAN NEELY
WILLIAM WALLACE
SAMUEL KUSIC
JOHN BENEDICT
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I N D E X

P R O C E E D I N G S

(9:15 A.M.)

CHAIRMAN THOMAS: This meeting will come to order. We are convened in the public hearing on Proposed Regulations 21 and 14.

Let the record indicate that there is a forum of Commission members present in the appearance of Mr. Crede Douglass, Cleve Benedict, Jean Neely, Sam Kusic, Doctor William Wallace and Newton Thomas, Jr.

Also, let the record indicate that the Court Reporter is Donna Kay Miller, and I would recite that any of those who wish to have the transcript of these proceedings should contact the Court Reporter individually.

The first regulation which we will present at this hearing will be Regulation 21, 45CSR21, Regulations to Prevent and Control Air Pollution from the Emission of Volative Organic Compounds.

This regulation in effect repeals and replaces existing Legislative Rules 45CSR21, 23 and 24, and it is made necessary by the Clean Air Act Amendments of 1990, Federal Clean Air Act Amendments which have

designated certain zones as moderate ozone nonattainment areas and it introduces and adopts the RACT standards for those counties which are moderate ozone nonattainment areas.

I would begin our proceedings by calling on the Director to make any comments that he should have at this time.

MR. FARLEY: I have just been advised by Larry Kopelman, our counsel, that the practice of the Commission has been to take testimony on rules historically with sworn testimony. I don't know whether I need to be sworn. He just advised me that I didn't need to be.

I think you have introduced the rule relatively well as far as the background. As you noted, as a mandated requirement of the 1990 Clean Air Act Amendments certain rules based on so-called control technology guidance documents that have been published by EPA over a number of years and a general requirement -- or what is called reasonably available control technology of all major sources in our three moderate -- what we think will be moderate but the actual formal designations have

not occurred yet as far as EPA publication -- that in our three moderate ozone nonattainment areas this rule represents all of the amendments of the RACT and CTG based standards that have at least been put forward in EPA or EPA contract to develop a model rule. That is what we are working from.

As far as giving the Commission and people present here a general outline of what is in the rule and what is covered, I would turn that over to John Benedict and Rupe Burford.

(Witness sworn.)

THEREUPON,

J O H N B E N E D I C T

being first duly sworn to tell the truth, testified as follows:

DIRECT EXAMINATION

CHAIRMAN THOMAS: State your name and position first.

THE WITNESS: My name is John Benedict. I am the Chief of the Air Programs Section of the West Virginia Air Pollution Control Commission.

Dale and Mr. Chairman have introduced the

purposes of the regs. I have some overheads to briefly go over each individual section. You will be able to index some of the comments related here from either myself or the manufacturers or other groups.

As was earlier mentioned, these regs were developed to meet the requirement of Section 182 (b) (2) of the Clean Air Act requirements. Section 182 of the Clean Air Act requires that designated moderate ozone nonattainment areas develop regulations on all issued CTG sources. It also requires that we adopt any regulation on any new issued CTG and that was Control Techniques Guidance document deviations.

The reg covers approximately 28 source categories. I don't know if you can tell, but the ones that are -- there are some that are highlighted that we know that we have sources in West Virginia or at least in the affected areas.

The ones that are not highlighted, we don't have those sources in the affected area. We decided to go ahead and include those sections in the regulation for the purpose of any new source review that we may have.

I will go down and briefly -- I did

provide the Commission with an executive summary that summarizes each section. You have a number of coating operations. That is primarily just spray painting or surface coating of cans, coils, paper, fabric, vinyl, metal furniture, et cetera.

We do not think that there are any major facilities such as cans, coils and paper industries within the affected areas. We do believe, however, the miscellaneous metal parts and products would affect certain specific industries in those areas.

The section dealing with gasoline marketing includes bulk gasoline plants, bulk gasoline terminals, gasoline dispensing facilities, and gasoline tank truck leaks. Now previously you had adopted Regs 21, 23, and 24 and those regs covered gasoline terminals, refineries, and fixed gasoline storage tanks.

So we are picking up additional bulk gasoline facilities and gasoline dispensing facilities, basically service station type operations, and that is typically referred to as Stage 1 control.

Petroleum liquid storage in external floating roofs, again we have sources that would be

affected. Natural gas, gasoline processing equipment leaks, that is primarily processing of drip gas and it is my understanding we are likely to have one source affected in the area.

Solvent metal cleaning is a rather broad category. It would cover a number of different individual sources. We have petroleum solvents and perchlorethylene dry cleaners, SOCMI, polymer and resin manufacturing equipment leaks, high density polyethylene, polypropylene and polystyrene resins, SOCMI air oxidation processes and of course major sources.

MR. FARLEY: Excuse me, John. The Chairman asked me this question. Just for anyone's interest, SOCMI stands for Synthetic Organic Chemical Manufacturers Industry. I don't know whether you said that or not, but that is a broad category.

MS. NEELY: Say that again slowly.

MR. FARLEY: Synthetic Organic Chemical Manufacturers Industry.

MS. NEELY: Yes, I have got that written down, but you said something in an undertone.

MR. FARLEY: It is a fairly broad

category of sources of chemical manufacturers.

MR. BENEDICT: I will briefly go over each section. If you have any questions, you can wait until I get finished or ask them then.

The general section generally states that we are repealing 21, 23 and 24, and it states that we are establishing reasonable available control technology for VOC sources in moderate ozone areas.

Definition, self explanatory. Applicability, there are provisions that exempt certain chemical and physical analysis operations as long as it is below 450 pounds per month.

It has a provision that you are going to hear a comment on as once in always in, and what that basically refers to is that if a source is capable of exceeding an applicability threshold and has done so or demonstrated it has done so at one given time, then it will be always affected by the regs whether or not it falls below that applicability threshold.

The EPA's policy on that is that for the monitoring of VOCs you almost have to do that on a full time basis, and it is almost impossible if somebody says

they fall below a threshold to make sure that they stay below that threshold on a full-time basis.

There is a three-year record keeping requirement where sources, whether they are below the threshold or not, would have to report for at least three years to give us some idea of whether or not they are staying below the threshold.

Section 4, compliance certification and record keeping. Basically sources are given one year to comply with the regulation, and if you are in compliance you shall certify within one year providing the appropriate data to show that you are in compliance.

It exempts any source that produces or emits less than 15 pounds per day VOC, and again there is that three-year record keeping requirement. That was for coating source.

Compliance certification record keeping reporting for non-coating sources, again compliance certification in one year and either you can demonstrate you are in compliance or you have got that year to get into compliance.

There is provision for excess emission

reporting and if you do have control equipment, you have to certify that control equipment is meeting its particular efficiency; again, the record keeping requirement.

Section 6, sources complying by control devices. It really specifies that you shall operate the control equipment full time. In other words, it shouldn't be intermittently operated and that you should have some type of monitoring equipment to demonstrate that the equipment is operating on a full-time basis.

Circumvention, prohibits modification of concealed emissions and diluents. We have added some language or we are going to propose or suggest to the Commission that we add language that also includes -- and I will get into that later; it ties into other sections.

Section 8, which is kind of controversial along with Section 40, which I believe we will hear a lot of comments on, primarily is intended to prevent miscellaneous emissions of VOCs. In other words, if here you are controlling VOCs, you are not allowed to use oily rags and just openly dispose of them and leave open containers of VOCs to evaporate to the atmosphere.

You are exempt from that provision if you are less than 15 pounds per day. It primarily deals with open storage of VOCs.

Compliance programs, registration, enforcement. The basic one year requirement can be extended to two years if it is approved by the Commission. You can go one more year if you enter into consent orders, and the mandated compliance date under the Clean Air Act is May 31, 1995.

So essentially sources have -- if we anticipate that the reg is promulgated and adopted in May '92, you have three years totally if you wish to comply with the regulation. You must register within 30 days. There is a 10-day variance provision at the Director's discretion and federal enforceability is a big issue with EPA.

Basically it says if for whatever reason the state fails to implement the regulation, that if the feds have to implement it that you have to provide some language in there that it gives the authority to say the administrator of EPA to implement various sections of the regs.

In some of the old regs that we adopted we said the Commission may approve or the Director may approve. From a federal enforceability standpoint, that doesn't work very well if the feds are trying to enforce the reg because they have no director; they have no commission. That is kind of a catch-all.

Coating operations; there are I believe 10 ultimately different coating operations, and again, there are various sections for can coating, paper coating, et cetera, and each section is applicable to that named source category.

You would be subject to the requirements of those provisions if you exceed 15 pounds per day of any VOC, extensive record reporting requirements, and you could use what they call complying coatings or control devices.

Complying coatings merely are if you are using high solvent coatings, there is a mechanism where you can go to lower solvent coatings and thus prevent the emissions to the atmosphere.

A section on miscellaneous parts excludes a source applicable to other sections of the reg. There

is still that 15 pound per day threshold. Again, you can use complying coatings or control devices.

Flat wood paneling generally is the same as coating operations. There are some differences.

Gasoline marketing -- and I could get into this in a little bit more detail later if the Commission wishes. Primarily it requires vapor tight or vapor balance for bulk plants.

Basically, you seal all loading and unloading operations, whether it be in the trucks or out of the trucks, such that you are preventing vapors from escaping to the atmosphere during those particular operations.

It does cover storage vessels, even some very small storage tanks, but generally that requires merely what we call submerged filling, which means instead of splash loading into an open-top tank that you put an extension on the hose and direct it down to the bottom of the tank and keep the turbulence level down.

The larger storage tanks, that requires floating roofs, and generally to my knowledge all of those sources have been controlled for a number of years merely

to conserve their product.

It will cover service stations and primarily that is a vapor balance. All the connections have to be vapor-tight. The vapor is collected and returned.

When you are filling into the storage tanks of service stations from a truck, all connections have to be vapor tight. All displaced vapors from the underground service station tanks have to be piped back into the truck.

There is a requirement under the Clean Air Act for Stage II vapor recovery. That is at service stations where you are capturing the vapors as they enter the vehicle itself.

There are provisions in the Clean Air Act where the EPA was to work out with the Department of Transportation over the safety issues whether that was to be done by on-board cannisters or has to be done at Stage II at the service station.

We have got a publication called Inside EPA that says that EPA says that on-board cannisters do not work. There are safety concerns. I understand this

issue will reside in court. For that reason we decided not to include Stage II vapor recovery in this regulation.

If there is on-board controls ultimately, then we are not to adopt Stage II controls. We may have to come back at some point when this issue is settled in court, maybe through an emergency reg next summer, and issue guidance on Stage II vapor recovery. We do have to have that as part of the reg and it does have to be in place by November '92.

Sections 23 through 26 are just petroleum refinery sources. Those were originally covered under Reg 24 except it extends into equipment leaks. We have no refinery sources at this time in the affected areas.

Section 29, gas, gasoline equipment, the drip gas processing, just a general overview of the prevention of leaks of that type of equipment.

Solid metal cleaner, rather extensive coverage. It does cover open top vapor degreasers greater than one square meter, conveyorized greater than two square meters and coal cleaning. There is a vapor pressure cutoff for the coal cleaning.

Cut back in emulsified asphalt. It is my

understanding that those products aren't used in the affected areas during the ozone season. I believe emulsified asphalt is used somewhat in the winter months.

MS. NEELY: What is the ozone season?

THE WITNESS: For West Virginia it is April 1 through October 1.

I will quickly go -- pharmaceutical product, control process equipment, rubber tire manufacturing, process equipment. We don't have those facilities in the affected areas.

Graphic arts or the printing presses greater than a hundred tons per year. One of our staff members did kind of a telephone survey of various newspapers and large printing facilities. We don't have any affected facilities in West Virginia or at least in the affected areas.

Dry cleaners, it is my understanding from discussing the petroleum solvent issue with a couple of large major dry cleaners in the affected areas that there may not be facilities that would be subject to requirements of the petroleum solvent just due to the 32,500 gallon per year threshold.

This reg definitely will affect perchlorethylene dry cleaners. There are exemptions if those small dry cleaners generally have insufficient steam or shop space to install the necessary controls. It does not cover coin operated dry cleaners. It is my understanding that perc dry cleaners generally that you typically see are the one hour dry cleaners.

SOCMI polymer and resin leaks, this is a controversial section and you will hear more about that later. Generally it requires some type of leak protection from process unit equipment. It requires an inspection and repair program for valves and that sort of thing.

There is an exemption, anything under 1,100 tons per year facility wide. That may preclude pilot plants that you will hear comment on a little bit later from the Manufacturers Association.

MR. FARLEY: That is 1,100 tons per year production, right?

THE WITNESS: Right.

Section 38 again reduces process VOC emissions; 39, SOCMI air oxidation, reduced VOC emissions from that type of process source; and Section 40 is rather

controversial along with Section 8 and I will explain that in a few minutes here.

Generally for those sources not subject to Regulation 21, anything greater than 100 tons per year would have to be controlled. The presumption is that those sources can achieve a minimum of 81 percent control efficiency.

There are provisions that a source may petition the Commission to do a demonstration that they can do an alternative equally effective control program.

Coating sources, the requirement is 3.5 pounds of VOC per gallon, and Sections 41 through 48 are test methods that primarily mimic the NSHAP or new source performance standard test requirements.

That is all I have on a brief overview. Are there any questions?

MS. NEELY: I have some.

EXAMINATION

BY MS. NEELY:

Q My questions are Stage II vapor recovery pertains to vehicles; is that correct?

A Yes.

Q You say we have to wait for EPA and this court action on in-vehicle cannister capture?

Is that the problem, the safety factor?

A We don't necessarily have to wait. We had considerable debate within the office of whether we should go ahead and try to include Stage II, but there is provisions in the Clean Air Act that if there is on-board cannisters, that you cannot adopt Stage II vapor recovery. It is very specific.

Q We don't then, do we?

A That is correct and we didn't know that until we had drafted the regulation and we were just waiting, and as a matter of fact, it was only up until a month ago that we had received any information indicating that on-board was likely not to fly.

Q Why can't we go the other way; in other words, put the capture on the hose end?

A That is Stage II.

Q Why can't we go ahead and do ours?

Why do we have to wait for the EPA and this court case results?

A We haven't had EPA guidance on Stage II

and I understand it came out the first of this month. We haven't received a copy of that yet.

Q So the reason that we wouldn't do this is because you haven't had a chance to assimilate the information that they have given you or to process it?

A That is correct.

Q Is it going to be too late for this?

A I really haven't looked at the guidance. It is a possibility we could include that or we can do that as emergency regulation next summer. It is whatever --

Q That is more paperwork though, isn't it?

Wouldn't it be better to try to capture it now and stick it in here or do you think that it is not a possibility?

A I think it is a possibility.

Q That is one question, Mr. Chairman. The other one is, are all of these regulations, everything that you reviewed, John -- are these all the same as EPA standards?

These are all EPA standards; there is nothing that is a variant off of that?

A First of all, they are primarily based off of CTG guidance and CTG guidance wasn't very specific. A lot of the CTGs were written in the late seventies and the early eighties.

They weren't very specific. They didn't require specific types of controls rather broadly. They merely suggested controls and the states were left to interpret the guidance as they saw fit.

EPA has issued a document called Cut Points and Deficiencies -- I believe that was in May of '88 -- that they recognized that states had different interpretations. So to level the playing field EPA issued this guidance document that provided further guidance and further requirements to the basic CTG document requirements.

So you have to kind of reference a couple of documents and policies that have come out of EPA over the years to kind of put that together to find out exactly what is required for each individual type of source.

Q My concern is that I really feel that we ought to tailor this stuff to West Virginia as much as we can. If we have got a problem and EPA standards or CTG or

whatever book you are looking at is not going to be adequate to deal with that, I think that we need to make sure that whatever we do is in the best interest of our problem here.

A There are some minimum requirements specifically listed into the CTGs. For instance, it seems like a rather strenuous requirement for the degreasing operations, but some of those merely have to put a cover on their tanks, for instance, and there is no cut off for coal cleaning which seems unusual.

You would think if you were using a coal cleaning solvent, basically that you shouldn't have that much VOC emission. That is not necessarily the case. CTG does not list any particular threshold cutoff for those types of sources.

Q Back here you say you are not going to regulate the purge solvent used to clean spray equipment during color changes, for example. That is one thing. My comment in my column here says why?

What is the difference?

A That is under Section 8.

Q It doesn't make any difference. It is

just an example of what I am talking about. I want to make sure that we have covered all our problem here.

A Well, I guess it is a big start. We have never -- the northeast states or the areas of the country that historically have had ozone problems, they have had these regulations in place for 10 or 15 years.

We have really not regulated VOCs well. We didn't really have an ozone problem until about 1988. So we have a long way to go in implementing these regs and it could get substantial reductions.

We have made kind of a rough estimation in our demonstration to EPA on trying to get the Huntington area from a serious ozone classification down to a moderate. We made some kind of rough estimation that this regulation is likely to get us on the order of 3,000 tons per year control.

So this is a start. We are just becoming familiar with the VOC regulations. If we have to go back and appeal on this, we will.

There are requirements in the Clean Air Act as a minimum. It is very prescriptive that you adopt these types of CTG regulations. You have to get a 15

percent reduction up front and then later we have to do urban air shed modeling that may indicate that we need further reductions.

MS. NEELY: Thank you.

EXAMINATION

BY CHAIRMAN THOMAS:

Q John, is Stage II required for all moderate ozone nonattainment areas?

A Yes. I think for private service stations or individual service stations there is a 50,000 gallon per month cutoff, but for a chain organization there is only a 10,000 gallon cutoff.

Q But it is standard for this classification of nonattainment?

A Yes. We also have an I&M program that we have to adopt and I think we have discussed that before with the Commission.

We have met with the Manufacturers Association. We know this regulation is rather extensive. We decided that maybe we ought to sit down with them early on and let them air their concerns.

We did provide them advance copies of

these prior to filing with the Secretary of State's Office. We did make some changes after we gave them those copies.

After we had two meetings with the Manufacturers Association they provided written comments which you have copies of. We have suggested changes and I will hand those out now and I will hand those out to anyone in the audience.

Q Those comments, do you have the dates on those comments that they were submitted to our office, August 20?

A August 20 was the Manufacturers Association and August 4. DuPont, I am not sure of the date of that.

Q September 4?

A September 4.

MR. FARLEY: They listed them as agendas and that was where they came in and met with us. We had those typed up actually on the dates that we talked to them.

(WHEREUPON, a discussion was had off the record.)

MR. FARLEY: September 4 was one and August 20, I believe, are the two dates and they are not listed in the heading.

THE WITNESS: Again, we are suggesting changes for the purpose of, I guess, fielding additional comments based on these changes over the next 30 days, written comments. We agreed with basically the manufacturers on a number of issues and a number of issues we did not agree with them.

I will pass these out to the Commission and, like I said, anyone in attendance here. We have additional copies -- just see me -- if anyone did not get one.

BY CHAIRMAN THOMAS:

Q This is referring to both the September 4 and August 20 --

A Yes, and addresses some of DuPont's comments too. For instance, we thought it was reasonable -- I think the manufacturers brought up some issues relating to requirements -- reporting requirements and reporting of test requirements and we have changed some of those sections.

I won't go through all of these. You will hear some of the comments, I believe, from the Manufacturers Association.

One of the most significant comments has to do with Section 40. That is what I call typically the catch-all section, that 100 ton requirement for major sources. That is on Page 182 of the regulation and I will go over that briefly.

One of the major comments was that it was felt that Section 40 exempted waste water treatment facilities, yet Section 8, that catch-all for rags, open containers and all, picked up those facilities and the way the language is structured in the reg at this time it would. We are proposing to change that.

Section 8 is on Page 24. Basically in Section 8 we are proposing language that would exclude the discharge to surface impoundment pits and waste water treatment facilities.

EPA is developing at this time -- and I believe it is November '92 as a target date for them to develop a CTG for industrial waste water treatment facilities. They are also going to look at the air toxics

issues and kind of mold those concerns in too.

We never intended for 8 to be a catch-all for those types of facilities and, therefore, are providing some language to exclude them at this time. You will see on our suggested change sheet, Page 24, Line 8 is where we are proposing to add that. It also exempts certain coating facilities too.

Now one of our concerns was that there was a likely possibility that industry or certain individuals would or could try to divert air emissions of VOCs to surface impoundments for the purpose of circumventing the regulation.

So on Page 23 there is that circumvention section we are proposing to add that no owner or operator subject to this reg shall discharge or dispose of VOCs or VOC contained material to surface impoundments, pits, waste water treatment facilities or sewers for the purpose of circumventing any provision or requirement of this regulation.

I am sure you will hear comments on Section 40, which is the catch-all, and could likely have the most significant effect on industry, and I would like

to point out a little bit or explain a little bit of what Section 40 is about and that again is on Page 182.

The first sentence under applicability, 40.1.8 primarily says -- there is some confusion. We have discussed this with the Manufacturers Association. Section 1 seems to indicate that any facility emits compounds not subject to -- this section applies only to any facility that emits a VOC and is not subject to Sections 10 through 39.

Our interpretation of that is that there are certain CTGs that cover facility-wide emissions. In other words, EPA has gone into a particular facility -- for instance a petroleum refinery -- proposed issuing a CTG standard for an individual type of source. They said well let's just look at broadly the whole facility and let's see how we can get reductions of VOCs.

So the first sentence primarily says that if you have a facility and if the CTG basically covers a facility-wide emission, that the facility is exempt from any hundred ton requirement. In other words, if they have a source that was not covered under the CTG that exceeds a hundred tons, Section 40 does not apply.

The second sentence indicates that sources where you have a CTG that only maybe affects a particular source within a facility, not facility-wide emissions -- for instance, air oxidation -- that this Section 40 would cover the remaining sources or aggregate sources that exceed a hundred tons per year.

That would require in this situation where you have maybe three sources not covered by a CTG, the air oxidation process is covered, that the total exceeds a hundred tons, that this facility-wide for these three sources be reduced 81 percent.

It would exclude waste water treatment and it would also exclude waste water treatment, the VOCs being emitted to being included in that aggregate.

MS. NEELY: What is the purpose of doing that?

THE WITNESS: The waste water treatment? EPA makes a statement or comment on their proposed CTGs that that is a very complex facility. There are air toxic issues that may be addressed to Section 112 of the Clean Air Act and they just want more time to develop adequate regulations.

You will see also -- again on Page 182 -- there is a section that excludes a number of different sources, barge loading facilities, primarily because it is my understanding and the guidance through the EPA that the Coast Guard really wants to develop standards for those types of operations primarily to provide some kind of consistency in specifying various connections on barges and stuff so they will be compatible between land loading facilities and that sort of thing.

I am not sure why jet engine test sales are excluded. Vegetable oil was studied at one time and it was a even a proposed CTG and it was finally withdrawn by EPA.

Again, waste water treatment facilities, and I am not sure why iron and steel -- maybe that is a very complex facility. Maybe -- you know, the purpose of these regs, these are reasonable available control technology -- maybe the fact that it would not be reasonable and it may not be available for the iron and steel.

So with that, based on some of the earlier comments, the August 20 and September 4 comments

of the Manufacturers Association, we still have some outstanding issues and they are very fundamental too, and I would defer that to the manufacturers to discuss with you and we will answer any questions they may have.

CHAIRMAN THOMAS: Any further questions pertaining to this witness?

EXAMINATION

BY MR. WALLACE:

Q One further follow up question on that Stage II vapor recovery question that was asked.

Do not some of the other states already have a methodology and some kind of cannisters on their hoses, and does that mean that they developed those or had regulations relative to them in advance of EPA's recommended guidance, or is that just that the manufacturers elected to do that voluntarily without regulation?

A I don't think anybody really does things voluntarily. I think you have to understand that the northeast has had ozone problems for a number of years. As I indicated earlier, they have adopted these rules for major sources.

In their demonstrations to EPA whether ultimately these levels of controls will reduce emissions of VOCs enough to get them in attainment, they showed in their demonstrations that it was not sufficient to show attainment of the ozone standard.

So the states independently on their own with some lead out of California adopted inspection maintenance programs for automobiles. They controlled their port sources.

What they have left when you do an emissions inventory and catelog and categorize all the sources, you will see over here 70 percent from automobiles. So it was logical back then they needed further controls over and above the minimum CTG requirements.

Maryland is looking at control in bakeries, for instance. Some states have realized that you have to control gasoline vapors at the service stations. I think the Washington, D.C. area does that already.

Most of the guidance, for instance, on -- and it is a real problem I am having in the agency is most

waste material in.

MS. NEELY: Yes, but that is still an opportunity and I just want to know if that is going to be captured in that definition. Isn't it constituted hazardous waste?

If it constitutes hazardous waste, then it has got no business going into any kind of -- other than a hazardous waste facility, either liquid or solid or whatever.

THE WITNESS: I tend to agree with you, but I think the sole purposes of this regulation -- and you can get off in other issues -- is that it is intended to reduce VOCs and it hopefully mimics to the extent possible the CTG requirements EPA has published.

Again, EPA has deferred waste water -- a CTG on waste water treatment facilities primarily because there are air toxics issues and they don't know how exactly to mold those in.

There are also questions -- and I am sure you will hear comment on -- on a program EPA has for early reductions of air toxics. So we have got several different sections of the Clean Air Act we have to kind of

of the guidance, for instance, on inspection and maintenance programs are from states. EPA had only gotten into the ball game issuing any kind of guidance in the last two or three years.

So I can't turn necessarily -- that is why we have not proposed at this time an I&M program. I can't turn to EPA and say, "Hey, give us the documents and we will read them and we will adopt." You know, I have to contact various states and find out what their program is and why they have made certain decisions on the type of I&M programs they have.

So states have taken the lead and this is a step for West Virginia. We should see significant reductions in VOC emissions that may ultimately demonstrate that we will meet attainment of the ozone standards.

MS. NEELY: Is surface impoundment a landfill? On Page 23, surface impoundment on your adendum -- surface impoundment, is that a landfill?

THE WITNESS: I don't know the definition of landfill. There had been in the past and I guess some facilities do have just ponds out there that they dump

mold in together, and whether or not we want to do this in a generic VOC regulation, I am not sure. It would certainly complicate this reg.

(WHEREUPON, a discussion was had off the record.)

THE WITNESS: Bob Weser of our staff has indicated there are proposed standards for VOC controls for landfills and I think --

MR. WESER: Under NSPS.

THE WITNESS: Under NSPS, New Source Performance Standards. There are provisions of the Clean Air Act where you may also look at existing facilities if you have got an NSPS standard, not necessarily that EPA does require that, but there is that likelihood.

CHAIRMAN THOMAS: Any other questions? Thank you, John. This is a pretty good overview.

(Witness stands aside.)

We have several persons who have asked to speak to Regulation 21. The first one is R. L. Foster of the West Virginia Manufacturers Association.

(Witness sworn.)

THEREUPON,

R O B E R T L. F O S T E R

being first duly sworn to tell the truth, testified as follows:

DIRECT EXAMINATION

THE WITNESS: Good morning. My name is Robert L. Foster. I am Chairman of the West Virginia Manufacturers Association Environmental Committee.

I am speaking on behalf of the manufacturers today regarding Series 21 concerning emissions of volatile organic compounds for facilities in ozone nonattainment areas.

The West Virginia Manufacturers Association is submitting -- I think you have received a copy of some detailed comments on proposed Series 21. I think it is about 50 to 60 pages long. Our written comments contain many of our concerns and comments referred to on issues by Mr. Benedict in his previous remarks.

Obviously with such a lengthy summary or detailed comments I am not going to try to summarize those comments at this time, but I will limit my statement to what we see as a fundamental flaw of the proposed

regulation which can be summarized as follows:

In prescribing the regulatory requirements applicable to various sources of VOCs the proposed regulation goes far beyond that which is required under the Clean Air Act Amendments of 1990 for states containing "moderate" ozone nonattainment areas.

Pursuant to Title I of the Clean Air Act Amendments of 1990 EPA requires those states containing moderate ozone nonattainment areas to revise their state implementation plans to require existing sources to implement reasonably available control measures, including reasonably available control technology or RACT. This requirement applies only to major stationary sources of VOCs.

For moderate ozone nonattainment areas the term "major" source is defined in terms of the potential to emit over 100 tons of VOCs per year with controls in place. In contrast, the APCC's proposed Regulation 21 generally makes no distinction between major and minor stationary sources of VOCs.

The adoption of this approach will have a dramatic impact on industry in these nonattainment areas

since the resulting regulation extends to sources which emit nominal amounts of VOCs. This result is clearly not contemplated under the Clean Air Act Amendments of 1990.

In addition to the hardships that the proposed regulation imposes on minor sources of VOC emissions, the proposed rule also goes beyond the requirements of the Clean Air Act Amendments of 1990 by prescribing in great detail steps which must be taken by individual stationary sources to implement RACT.

The federal program contemplates that RACT will be determined on a case-by-case basis for sources not covered by control technology guidelines.

For sources covered under a CTG document, the CTG represents a recommendation about the measures EPA believes are sufficient and necessary to constitute RACT.

The states need not define RACT in a manner more stringent or more detailed than the CTG. The CTG documents define RACT in terms of general criteria such as recovery efficiency.

The various control technologies, work practices, process changes, and operational methods which are discussed in CTG documents are intended only for

purposes of illustration.

This approach is intended to provide maximum flexibility in recognition of the inherent unfairness of imposing rigid requirements on existing sources as opposed to new sources.

In contrast, the APCC's proposed Regulation 21 seeks to rigidly define the steps and procedures that existing sources must implement to meet RACT requirements.

These standards borrow heavily from the standards applicable to new sources under the federal New Source Performance Standards. The proposed regulation also imposes detailed and rigid monitoring, record keeping and reporting requirements and that are not well coordinated with other provisions of the state's air program.

This rigid regulatory scheme fails to appropriately take into account that the provisions will be applied to existing sources rather than new sources.

The differences between the requirements of the Clean Air Act and the requirements of the proposed regulation are apparently rooted to some degree on

guidance received from EPA in the form of a model regulation provided to the Director, and reliance on this model regulation requires two significant points -- or raises two significant points.

First, the document is intended only as guidance. It has not been published in the Federal Register or subjected to notice and comment and reflects only the initial views of EPA on the provisions that might be included in state programs.

These views will continue to develop and undergo change as EPA begins the process of reviewing and approving State Implementation Plans. Ultimately, the State Implementation Plans will be approved or disapproved on the basis of whether they implement the requirements of the Clean Air Act.

Second, from a practical standpoint the WVMA notes the ozone nonattainment problems experienced in West Virginia are relatively insignificant when compared to nonattainment problems of other states.

The nonattainment areas in West Virginia are significantly impacted by the transport of VOC emissions from out-of-state. In addition, these areas

have been designated as moderate nonattainment areas primarily on the basis of 1988 data.

These circumstances tend to overshadow the significant reductions in VOC emissions which have been achieved under existing regulations. It is not necessary to go beyond requirements of the Clean Air Act for these reductions to continue or for the ambient standards to be achieved.

We, therefore, urge the Commission to restructure the rule to reflect a fundamentally more simple and flexible approach which will result in the development and approval of case-by-case RACT compliance plans for sources which in many cases will be struggling concurrently to meet not only this rule but also Regulation 27 and the new federal Title III Air Toxics Program.

On behalf of the WVMA I express my appreciation for the opportunity to present this statement and to submit our written comments to the Commission. Those of us who are here today on behalf of the WVMA stand ready to answer any questions the Commission may have regarding these proposals. Thank you.

CHAIRMAN THOMAS: Are there any questions of Mr. Foster by the Commission? Mr. Farley, do you have any questions?

MR. FARLEY: I don't have any questions now.

CHAIRMAN THOMAS: Hearing none, thank you.

(Witness stands aside.)

CHAIRMAN THOMAS: Let us now call on Mr. Brian Hagenbuch of the West Virginia Environmental Council.

(Witness sworn.)

THEREUPON,

B R I A N H A G E N B U C H

being first duly sworn to tell the truth, testified as follows:

DIRECT EXAMINATION

THE WITNESS: Good morning. My name is Brian Hagenbuch with the Ohio Valley Environmental Coalition. I also speak on behalf of the West Virginia Environmental Council today.

My comments are very general. My

understanding at the last Air Pollution Control Commission meeting is that they were leaning toward a working group toward working on these regulations, not only with the Commission but also with the industry and with the environmental community and with concerned citizens.

We were not privy to the working group that the Manufacturers Association had been in here. So my comments are fairly general based on what I saw this morning, some of the information that I have received over the last few days. Most of them are specific to these regulations.

We will submit written comments if given an opportunity at some point today. I have some concerns over some proposed code changes of the whole Clean Air Act process of implementation in the state.

As Mr. Benedict was saying, we have got several moderate nonattainment areas for ozone in the state. When you think ozone nonattainment I first speak of the northeast states and the L.A. basin and other areas. Well, we are moderate here.

The Clean Air Act Amendments from my understanding put a major emphasis on transportation on

the Stage I, Stage II modifications for the VOCs.

Basically, they are looking at the automobile. If you look at the northeast area and if you look at L.A., the point source emissions for VOCs in those areas have already had modifications, control technologies and regulations placed on them and so their next step is the automobile.

In West Virginia my understanding is we have not put any regulations on point sources. Now in a moderate nonattainment area we are looking at a 15 percent reduction.

My concern is that with placing regulations on point sources in these areas, I think we will have far more dramatic impact on reducing the ozone problem than we would if we have the automobile.

We do not have the major thoroughfares or the automobile population that the L.A. basin or the northeast states do. So our emphasis is going to be putting enforcing regulations on point sources in addition to the automobile.

If under the Clean Air Act we put these Stage I, Stage II programs under the automobile and on the

point sources, we may find that we are reducing our ozone problem 20, 25 percent.

That is a bonus because there is a lot of scientific literature coming out right now that is saying the ozone standard is too weak, that it should be strengthened because the new scientific evidence is linking legal ozone standards with health problems.

Some of the specific comments under Section 3, Applicability, we are concerned about the exemption of equipment that emits over 5,000 pounds of VOCs a year. My concern there is that the exemption is a broad range of those VOCs.

If we can pinpoint the VOCs that are photochemical reactive or some that are carcinogens or geratogens, (phonetic) mutagens, perhaps we should not give them the exemption of that 5,000 pounds.

Those VOCs which are not photochemical reactive are not going to be a problem with the ozone. So an exemption of 5,000 pounds may be okay, but if we are looking at point sources that are photochemical, perhaps we should be a little more stringent there.

Section 7, we strongly support the

language that prohibits the circumventing of the rule requirements in the cross media transfers.

Under Sections 26, 29 and 37 we question whether the APCC can enforce the quarterly monitoring of the compressors, the pumps, and the valves since this is going to be industry itself reporting, and will the APCC be able to provide oversight and checking on industry data and a repair program?

I am a little confused and concerned about these major non-CTG sources, the proposed exemptions for coke ovens, waste water plants, iron and steel production.

Perhaps as we continue to discuss these regs and I find out more information on why iron and steel and coke ovens, which are major VOC emitters -- and that is a broad spectrum of VOCs; I believe under Title III they do have a specific chemical called coke oven emissions -- we can get a better understanding of how those VOCs would impact in the nonattainment areas.

One major concern I have in these regs and it didn't allude to them -- at least in the summaries I have seen it didn't allude to any other areas, but there

is nothing in the regs regarding violations and penalties for noncompliance. I have seen repair schedules. Perhaps it was in that 270 pages which I wasn't able to cover.

In addition to the -- we will have written comments. From my notes that I am trying to understand here, that is about all my comments on Reg 21. I do have others regarding some code changes. If you would like them submitted in writing or while I am up here, I could talk about them.

MR. KOPELMAN: We will be discussing those later.

THE WITNESS: Okay.

CHAIRMAN THOMAS: Just speak to 21 at this time.

Are there any questions from the Commission?

EXAMINATION

BY CHAIRMAN THOMAS:

Q One observation, you refer to when you have no point sources of VOCs. I assume you mean control point sources -- when you say the state did not heretofore control point sources as again in the L.A. basin, am I to

assume --

A My understanding is there was no state program of regulations on point sources for VOCs for ozone nonattainment for ozone areas. I can understand all point sources having some form of regulation on it, but specifically toward VOCs toward reducing ozone problems --

Q These regulations are being superceded by this one to address some of that. So we did have at least some attempt to control petroleum refineries and storage. If that had any beneficial effect, it would have been realized by now. That is just a comment.

As far as your input, if you submit written comments we certainly want to entertain all of those, and if a meeting with the Director is something you desire to discuss that, that is also available to you.

Any other questions?

MR. FARLEY: I don't have any questions.

CHAIRMAN THOMAS: Thank you so much.

(Witness stands aside.)

CHAIRMAN THOMAS: Is there any other person in the audience that would like to comment on Regulation 21?

MR. BENEDICT: Mr. Chairman, procedurally could I add something to my comments earlier to address some of the comments the manufacturers had at this time?

CHAIRMAN THOMAS: Yes.

(Witness recalled.)

THEREUPON,

J O H N B E N E D I C T

having been previously sworn to tell the truth, further testified as follows:

REDIRECT EXAMINATION

THE WITNESS: The Manufacturers Association had indicated that these rules are only to be adopted for major sources, a hundred tons. That is not necessarily the case in my view. There are some CTGs that require controls on sources that could not even potentially emit a hundred tons, for instance gasoline storage facilities, surface coating operations.

So they have indicated that we should only adopt some type of controls for sources that emit greater than a hundred tons, and I just want to kind of clarify that, that it doesn't necessarily have to be greater than a hundred tons, only for major sources that

are not subject to CTGs.

EXAMINATION

BY CHAIRMAN THOMAS:

Q That raises another question on the use of CTGs. Is it in your judgment mandatory that the CTGs be used in order to satisfy the RACT provisions in the Clean Air Act Amendments?

A The Clean Air Act specifically refers to CTGs, adopted CTGs, and I will say that some of the --

Q First tell me what was the document.

A The CTG document -- I am not sure we have a copy in this room -- it generally -- well, the title will be like a controlled volatile organic compounds from fixed roof storage tanks, and in that it will provide a general overview of the types of sources we are dealing with, the numbers nationally, some emission estimate, and it will stipulate basically what a facility can do in a range of compliance options to reduce those VOC emissions.

I will say that some of those CTGs are rather old. EPA has cited a number of deficiencies over some of the covert auditing they have done in state programs over the years and issued a document that cut

points some deficiencies which I provided a copy to the Manufacturers Association. That further defines what RACT is in regards to using CTGs.

CHAIRMAN THOMAS: Thank you. Any other questions?

(Witness stands aside.)

CHAIRMAN THOMAS: Do you have any concluding comments, Dale?

MR. FARLEY: I will make just a couple of comments on several statements. One is something we haven't followed up on really yet. Brian had mentioned the idea that we were going to pursue an idea of maybe seeing whether there was any interest in any kind of a working group, advisory group. That is something that is still something we need to define what the issues would be.

One thing I would say about this regulation is I don't think we anticipated, given the fact that we had already put this regulation in the mill, at least as far as an interim draft to the Commission, we would try to do that with this rule and we would try to get a working group.

If anybody is interested in any particular provision, I think that we would just sit down and talk with them just like we have with the Manufacturers Association.

This kind of rule, other than the comments you have heard about whether we exceeded the intended scope of the Act and some other things we need to address is so prescriptive -- well, I think you have heard a comment that it is maybe overly prescriptive, but it is defined. It is not like something we are trying to absolutely describe.

So I think that that was not something with this particular rule, given the timing and overall complexity of getting the rule in place, we anticipated would be something you could work, some kind of a broad-base work group.

I don't know what to respond on the comment about why coke ovens and waste water and some of the other things were exempted in the model rule the EPA developed. The only thing I can think of is that maybe the EPA used -- for example with coke ovens, that is in one of the early MACT categories.

Waste water we have a big question on. I don't know whether that came through in what John was saying. That is something in relation to the comments we received that we will give a lot of thought to because that is a pretty well big issue as far as the cross media problem.

What John just handed me is that there is apparently a CTG being developed or being prepared now for petroleum industrial waste water, and I would assume that that is the reason that as of this time in terms of drafting any model rule it is not here. It is something that is really underdeveloped and it is a fairly complex thing to deal with.

There again, I think there is a little confusion in that thing. We will look into that. Our understanding is the moderate areas at this time -- our understanding is as of today with what we have heard even in moderate areas if there is a CTG given that they have inherently in most of them cut points as far as applicability, that you would put them in place even for a non-major source.

I think what adds confusion to that is it

is under the provisions of the 1990 Clean Air Act. Major source has different meanings and different severity class areas. That could mean in L.A., for example, a 10 ton per year source and in others maybe 50.

So we will look into that in terms of whether the scoping was as intended in the Clean Air Act. As of today we assume that that is correct.

I think that is really the only comments I have in terms of what I have heard.

CHAIRMAN THOMAS: Just an aside, it was mentioned in one of the comments what the staffing requirement is to administer this. Have you given any thought to that, and what are we talking about in terms of numbers?

You have got a lot of heretofore unregulated entities that would be listed and others that would have to be monitored and inspected periodically. Where do we stand on this?

MR. FARLEY: Well, staffing is -- I have talked at some length with Commissioner Neely about that. One of the things we have been trying to think through of late is, irrespective of where we are today, what we are

going to do in relation to this one or two or three-year wrap up to do the Title V Permit Program and what that is going to entail.

I would envision that at least for major sources that are involved here, most of this is really going to become an issue when you start writing a year or two down the road the compliance programs or whatever is done down to a point where you are going to require those particular kinds of monitoring and you have to write those permits.

Frankly, without having a real good fix on how these rules are going to apply and what the scope is today -- you know, what the volume of records is going to be, it is really hard to determine what staffing is going to be, but I don't think there is any question that to put in place the rules like this with all of the very specific provisions of rules of this type and beyond the rules -- even beyond the rules -- monitoring requirements in Title V Permits or other permits we might develop is going to create a situation where you are truly enforcing a tremendous staff to do it. So I can't get any better than that -- give any better comments than that.

CHAIRMAN THOMAS: Any other comments?

MR. WALLACE: What is the time table now for the rules; 30 days for group comments to come in?

CHAIRMAN THOMAS: Yes. I was going to say that at the conclusion of the hearing on the other reg, but yes, in 30 days from the hearing you can submit comments to the Commission on both of these regulations. Then the Commission will meet and make a decision on any revisions that are made as a result of it.

MR. WALLACE: Then does that go through the --

CHAIRMAN THOMAS: It goes to the rule making commission.

MR. WALLACE: The regular rule-making legislative time table?

MR. KOPELMAN: That is correct.

CHAIRMAN THOMAS: They have written a letter already to the co-chairman of that legislative commission anticipating that this would become a rule.

MS. NEELY: I think there is a letter on record.

CHAIRMAN THOMAS: That is right. He has

made a -- I understand the EPA is November 1992 when these two have to be in place.

MR. WALLACE: As part of the submission to the rule-making process does there have to be a fiscal impact; i.e., cost of implementing and monitoring?

MR. FARLEY: Yes. There has to be a fiscal note. That is one of the things that has really given us the biggest headache to even think through at this point given the data base and we have a number of sources that are being built. If you really try to construct that properly, that is going to be a real task.

MS. NEELY: When does the Commission have another swing at this? Is this based on the 30-day period? Does this come back here --

CHAIRMAN THOMAS: It comes back here for a final --

MS. NEELY: -- after verbal and written comments and we decide it then --

CHAIRMAN THOMAS: Put our approval on it.

MS. NEELY: -- and send it forward? Then what is the time limit after that?

CHAIRMAN THOMAS: The sequence is now

through the Secretary's office.

MR. KOPELMAN: It would be a parallel approach. It would go to the Secretary. The Secretary has already given authorization to the Commission to proceed with this reg, and the Secretary could, I suppose, come back with comments, back to the Commission.

The Commission could then withdraw it from rule-making, but it would go to rule-making and the Secretary at the same time.

MS. NEELY: That is the legislative --

MR. KOPELMAN: Legislative Rule-Making Review Committee.

MS. NEELY: How long does it take them?

MR. KOPELMAN: They like to see these regs come in so many months prior to the beginning of the session. I think they like to see them come in in August.

MR. BENEDICT: We have already missed the deadline.

MR. FARLEY: Right, we missed that deadline.

MR. KOPELMAN: Historically they have been lenient towards this Commission and other agencies

getting regs in a little late.

MS. NEELY: Will they have hearings on this?

MR. KOPELMAN: Yes. Sometimes they have subcommittee hearings prior to the legislative session beginning and sometimes they don't, but in every reg that we have ever sent over they have always had both House and Senate hearings on the reg before the Rule-Making Review Committee, and if it gets a reference to natural resources, which all of them have in the last couple of years, it would have a hearing before the Natural Resources Committee as well.

CHAIRMAN THOMAS: Okay, are we ready to move into the next?

MR. KOPELMAN: You would need to close this hearing.

CHAIRMAN THOMAS: This will officially end the hearing on Regulation 21.

(WHEREUPON, at 10:35 a.m., the hearing was concluded.)

REPORTER'S CERTIFICATE

STATE OF WEST VIRGINIA,

COUNTY OF KANAWHA, to wit:

I, Donna Kay Miller, do hereby certify that the foregoing is, to the best of my skill and ability, a true and accurate transcript of all the testimony adduced or proceedings had in the aforementioned case as set forth in the caption hereof.

Given under my hand this 5th day of October, 1991.

My commission expires November 4, 1992.

Donna Kay Miller

Certified Court Reporter
Notary Public

GE Plastics

September 18, 1991
(006472)

Certified P 892 293 467
Return Receipt Requested

Mr. Dale Farley, Director
West Virginia Air Pollution
Control Commission
1558 Washington Street, East
Charleston, West Virginia 25311

Dear Mr. Farley:

With regards to proposed Series 21 (Regulations to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds), I wanted to voice my support of the the comments filed by the West Virginia Manufacturers Association. Two issues of paramount interest to us is how will Series 21 affect our plans to apply for an extension of implementation of MACT at our facility and the eventual implementation of MACT. These are discussed below.

BACKGROUND: One of the major goals of the Clean Air Act Amendments (CAAA) of 1990 is to regulate the emissions of toxic chemicals to the atmosphere. The act has also included incentives to industry to reduce emissions prior to the proposal of MACT. The proposed federal MACT/Early Reduction regulation strives to give industry wide flexibility in grouping emission points into sources and petitioning the agency for an extension of implementing MACT by demonstrating a 90% or greater reduction in emissions from a 1987 base-line by January 1, 1994.

While not always true, the control of toxic VOCs will usually result in the control of non-toxic VOCs. Due to the large commitment on a source to obtain an extension to MACT and due to the intent of the toxic emissions everywhere along with VOC emissions in areas of ozone non-attainment, it is proposed that emissions points/sources meeting the MACT extension requirements also meet the intent of the Amendments' for the control of VOCs.

Likewise, the installation of RACT may not meet the MACT requirements which, as you know, are not yet proposed. As a result, RACT installed in the near future may be obsolete in only a few years when MACT is defined and effected. This may result in large economic hardship on us and others in industry.

RECOMMENDATION: It is recommended that the regulation be modified to give facilities the flexibility to opt into early reduction of toxic emissions. Such wording may include an exemption for emission points/sources applying for/receiving an extension to MACT implementation.

If you should have any questions regarding this correspondence, please contact me at (304) 863-7041.

Respectfully,

Timothy J. Weisenberger
Environmental Engineer

cc: P. Snyder
R. Roberts

CC: Dale Farley, Director--APCC

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
BELLE, WEST VIRGINIA 25015

AGRICULTURAL PRODUCTS DEPARTMENT
BELLE PLANT, 901 W. DU PONT AVENUE

July 11, 1991

Mr. John Benedict
WV Air Pollution Control Commission
1558 Washington Street, East
Charleston, WV 25311

Dear Mr. Benedict:

The following are comments on the proposed Regulation 21. Several comments pertain to clarification of specific parts of the proposed regulation; several comments pertain to differences between the proposed regulation and federal requirements.

1. Page 7, Section 45-21-2, "Definitions"

   The definition for "process unit" seems only to apply to natural gas processing. Should not the definition be more broad to cover other types of processing.

2. Page 10, Section 45-21-2, "Definitions"

   The definition for "[In] VOC service" includes a fluid that contains 1% VOC by weight. The federal definition is 10% VOC by weight.

   This also conflicts with the statement in Section 45-21-37 .1(a)1 which states the a piece of equipment is not in VOC service if the VOC content of the process fluid can never be reasonably expected to exceed 10% by weight.

3. Page 19 & 20, Section 45-21-5, "Compliance Certification, Recordkeeping, and Reporting Requirements for Non-Coating Source

   The language in this part is confusing. This section is for non-coating sources and apparently applies to chemical manufacturing processes. Paragraph 5.1a requires an initial compliance certification; paragraph 5.1b requires that the certification for the subject source listed in the initial certification include applicable emission limitations, method of compliance and control system in use. A certification that all subject sources are in compliance with applicable emission limitations is also required. Paragraph 5.1 requires that this be done within six months after the effective date of the regulation.

Paragraph 5.3 (Page 20), however, states that in the initial compliance certification of control equipment, testing must be done within 12 months (1 year) after the effective date of the regulation or startup of a new source. The language is confusing in that paragraph 5.1b requires compliance within 6 months whereas paragraph 5.3a requires compliance within 12 months.

4. Page 24, Section 45-21-8, " Handling, Storage and Disposal of VOCs

Does this part include working and breathing losses from unloading and storage of VOCs. If it does, the language in this part should be worded more clearly to state this.

Does this section include evaporation from treatment of wastewaters in activated sludge systems?

Does the 5kg (11 lbs.) apply to what is stored/handled or to what is evaporated? The language implies no evaporation into the ambient air.

5. Page 25, Section 45-21-9, "Compliance Programs, Registration, Variance, Permits, Enforceability"

This section requires an acceptable program to comply with this regulation be developed and submitted to the commission by the owner and/or operator within 60 days of the effective date of the regulation.

This time frame (60 days) is too short because in some cases testing and evaluations are required. Often, contractors are required to do the testing, and 60 days is not sufficient for this. Six months for defining a complete program is reasonable and more in line with federal guidance on RACT program compliance scheduling.

With respect to full compliance, it is recommended that the date for compliance be November 15, 1995 rather than May 15, 1995 to coincide with the federal compliance deadline for the first 40 categories under the MACT standards.

6. Page 160, Section 45-21-39, "Air Oxidation Processes in the Synthetic Organic Chemical Manufacturing Industry"

Table 1, which gives the coefficients for the Total Resource Effectiveness (TRE) Equation, does not agree with the table published in the June 29, 1990 Federal Register for this same category.

7. Page 174, Section 45-21-41, "Test Methods and Compliance Procedures: General Provisions"

Paragraph 41.4 (Summary of Results) states that the preliminary results must be submitted to the director not later than 30 days after sample collection whereas paragraph 41.2d(2) states that the date of submittal of preliminary results be no later than 15 days after sample collection.

8. Page 187, Section 45-21-45, "Test Methods and Compliance Procedures: Determining the Destruction or Removal Efficiency of a Control Device"

Paragraph 45.8 states that Methods 2, 2a, 2c, 2d, 3, 3a and 4 of 40CFR Part 60, Appendix A be performed at least twice during each run. This requirement to run the method twice during each run is more stringent than the federal requirement which, to my understanding, requires that the method be performed once during each run.

Sincerely,

Ronald E. Smith

RONALD E. SMITH
STAFF ENGINEER

WEST VIRGINIA
MANUFACTURERS ASSOCIATION

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405 CAPITOL STREET
CHARLESTON, WV 25301
TELEPHONE (304) 342-2123

91 OCT 29 PM 3:43

October 29, 1991

Mr. John Benedict
Air Pollution Control Commission
1558 Washington Street, E.
Charleston, West Virginia 25311

RE: Follow-Up to October 7, 1991 Meeting

Dear John:

At our October 7, 1991 meeting, you invited the WVMA to provide alternative language to several provisions of the proposed VOC regulations. The WVMA offers the following suggestions in response:

(1) Section 40.1.a:

> This Section 40. applies to any facility that has maximum theoretical emissions of 90.7 megagrams (mg) (100 tons or more per year) of volatile organic compounds (VOC) per calendar year in absence of control devices and is not subject to regulation under Sections 10. through 39. In addition, a source or sources within a facility are subject to this Section 40. if the source or sources are not regulated under Sections 10. through 39. or are not regulated as specified in Section 40.1.e., provided that such source or sources, along with any source or sources at the same facility which are regulated under Sections 10 through 39 but which fall below the applicability thresholds of those sections and thus are not subject to the control requirements of those sections, as a group have theoretical emissions of 90.7 megagrams (Mg) (100 tons) or more per calendar year of VOCs in the absence of control devices.

Discussion: During the course of our October 7, 1991 meeting, you indicated that the first sentence of Section 40.1.a is intended to cover situations where the control requirements of Section 40

apply on a facility-wide basis, while the second sentence of Section 40.1.a is intended to address situations where particular sources within a given facility are subject to the control requirements of Section 40. The first sentence, however, fails to limit the application of Section 40 to those facilities that exceed the 100 tons per year (tpy) applicability threshold. In addition, the second sentence must be revised to indicate that where a facility contains some sources regulated under Sections 10 through 39 and other unregulated sources, only the unregulated sources are subject to Section 40. The second sentence of Section 40.1.a should also be revised to indicate clearly that emissions from sources regulated under Sections 10 through 39 but falling below the exclusion levels found in those sections are included with emissions from unregulated sources for purposes of determining whether the unregulated sources, as a group, have theoretical emissions of 100 tpy or greater.

It is noted that the WVMA reserves its objection to the use of the phrase "in the absence of control technologies" in Section 40.1.a. However, pursuant to our conversation at the October 7, 1991 meeting, we have not raised the issue of whether theoretical emissions should be determined with control technologies in place as part of this response.

(2) **Section 40.1.e:**

> The requirements in this section 40. shall not apply to coke ovens (including by-product recovery plants), fuel combustion sources, barge loading facilities, jet engine test cells, vegetable oil processing facilities, wastewater treatment facilities, surface impoundments, pits, iron and steel production, and boilers, industrial furnaces, and incinerators with destruction efficiency of 95 percent or greater.

Discussion: The topic of exempting incinerator units from the requirements of Section 40 was also raised during the course of our October 7, 1991 meeting. As discussed at that meeting, boilers, industrial furnaces, and incinerators that serve as emission control devices would not be subject to regulation as a source of VOC emissions under Section 40. Conversely, boilers, industrial furnaces, and incinerators which did not act as control devices

would constitute uncontrolled sources of VOCs and would thus be subject to the control requirements of Section 40 if the 100 ton applicability threshold was exceeded. As you indicated, it is unlikely that a boiler, industrial furnace, or incinerator would emit 100 tpy VOCs due to the efficiency with which boilers, industrial furnaces, and incinerators typically destroy VOCs. However, under Section 40.1.a, the 100 ton applicability threshold would be determined by adding together the emissions of all sources of VOC's at a facility that are not regulated under Sections 10 through 39 (along with sources regulated under Sections 10 through 39 but falling below the exclusion levels of those sections). As a result, emissions from boilers, industrial furnaces, and incinerators would often be subject to the 81 percent reduction requirements of Section 40.2.a despite the fact that boilers, industrial furnaces, and incinerators have among the highest destruction efficiencies of any available technology.

To require 81 percent reductions in VOC emissions from units with destruction efficiencies that typically exceed 95 percent goes far beyond the implementation of RACT and is clearly not required by the Clean Air Act. For this reason, the WVMA requests that Section 40.1.e be revised to exclude boilers, industrial furnaces, and incinerators with destruction efficiencies of 95 percent or greater. Corresponding changes should also be made to Section 8 of the proposed regulation.

(3) Section 40.2:

Standards - the owner or operator of any ~~source at a~~ facility subject to this shall:

Discussion: The WVMA wishes to confirm its understanding that sources regulated under Section 40 may meet the control requirements of Section 40.2 by controlling emissions on a facility-wide basis (i.e., by "bubbling" the emissions from all sources at the given facility that are subject to the control requirements os Section 40). It was our understanding from the October 7, 1991 meeting that the introductory language of Section 40.2 was revised as shown above in order to indicate that the control requirements of Section 40.2 may be met by controlling emissions on a facility-wide basis.

(4) Section 40.2.a:

> Install and operate emission capture and control techniques, or use of complying coatings that achieve an overall reduction ~~in~~ from uncontrolled VOC emissions, as determined by 1990 base year emissions, of at least 81 weight percent;

Discussion: The WVMA had previously commented that this section should be revised to specify a base year for determining the required 81 percent reductions in VOC emissions. The WVMA understands from our discussions of October 7, 1991 that the 81 percent reductions required under Section 40.2.1 are from uncontrolled emissions of VOCs. However, this clarification does not obviate the need for establishing a baseline year for purposes of determining the level of uncontrolled emissions. As processes are changed and equipment is installed or taken out of service from year to year, the level of uncontrolled emissions at a given facility can be expected to vary accordingly. Thus, a baseline year must be chosen to determine the level of uncontrolled emissions from which the 81 percent reductions must be achieved. Clean Air Act §182(b)(1)(B) states that calendar year 1990 must be used as the base year for purposes of demonstrating reasonable further progress under Section 182(b)(1)(A). Thus, the setting of the base year as 1990 is a requirement of the Clean Air Act. Although the 1990 emissions inventory may not be completed by the time Series 21 is implemented, individual facilities will have quantified their 1990 emissions to comply with emissions inventory requirements and will have the necessary information to comply with the control requirements of Section 40.2.

(5) Section 9.3:

> If the provisions of this regulations cannot be satisfied due to unavoidable malfunction of equipment or other conditions resulting in emissions exceeding a level established in the compliance program, the Director may permit the owner or operator of a source subject to this regulation to continue to operate said source for periods not to exceed 10 days upon specific application to the Director. Such application shall be made within 24 hours of the equipment malfunction. In cases of a major

equipment failure, additional time periods may be granted by the Commission provided a corrective program has been submitted by the owner or operator and approved by the Commission. During such time periods, the owner or operator shall take all reasonable and practicable steps to minimize VOC emissions.

Discussion: Section 9.3 of the proposed regulation provides for a variance where the requirements of the regulation cannot be satisfied due to the unavoidable malfunction of equipment, but does not provide a variance for necessary repairs. Many chemical manufacturing operations are continuous (i.e., 24-hour) operations. To shut down such operations for necessary maintenance and repairs would typically result in more serious environmental problems than if operations were continued during maintenance activities. Section 9.3 should be revised to incorporate the flexibility of Section 12.1 of Series 27 in providing a variance for excess emissions due to unavoidable malfunctions of equipment or other conditions resulting in emissions exceeding levels established in the compliance program. The expansion of the variance provision to cover excess emissions associated with necessary repairs and maintenance would allow regulated sources to better plan and schedule maintenance activities, and thereby avoid emergency situations. At the same time, the language proposed by the WVMA would require regulated entities to take all reasonable and practicable steps to minimize VOC emissions while making necessary repairs. The WVMA understand this is an issue which must be reviewed by Director Farley and, by copy of this letter, we request that Director Farley consider revising Section 40 to reflect the changes indicated above.

(6) Once-In-Always-In Provisions

Another issue the WVMA requests Director Farley to reconsider is the inclusion of the "once-in-always-in" provisions found in various sections of the proposed regulation. Operations that eliminate sources of VOCs by changing processes (i.e., substituting water-based coatings for solvent-based coatings) should not continue to be subject to the VOC regulations after eliminating sources of VOCs. The once-in-always-in provisions are not based on any requirement of the Clean Air Act. Guidance from

WEST VIRGINIA
MANUFACTURERS ASSOCIATION

EPA on this particular issue should be kept in its proper perspective. The guidance documents received from EPA have not been subject to notice-and-comment rulemaking requirements, and thus do not have the force of a final rulemaking. The purpose of such guidance is to give some indication of the provisions EPA would find acceptable in reviewing the State Implementation Plan. This does not mean that states are precluded from addressing EPA's concerns in other ways that are consistent with the provisions of the Clean Air Act. Thus, any concerns that operators will revert to their previous processes can be addressed through implementation of an annual certification requirement which, combined with enforcement, will ensure that operators do not circumvent the regulatory requirements of Series 21.

The WVMA appreciates this opportunity to follow-up our discussions of October 7, 1991. Please feel free to contact me at your convenience if you have any questions or comments.

Very truly yours,

Robert L. Foster

RLF/bla
enc.
cc: G. Dale Farley, Director

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

NOV 13 1991

Mr. G. Dale Farley, Director
West Virginia Air Pollution Control Commission
1558 Washington Street, East
Charleston, West Virginia 25311

Dear Mr. Farley:

We have reviewed the public hearing comments submitted by the West Virginia Manufacturers Association (WVMA) with respect to the proposed Series 21 regulations, and our response follows:

SECTION II GENERAL COMMENTS

WVMA COMMENT #1:
The proposed regulation should not prescribe particular measures and procedures for implementing RACT.

EPA'S RESPONSE:
This request is unacceptable to EPA. EPA cannot generically approve any alternative control procedures in a State Implementation Plan (SIP) revision which is not explicitly described in the regulation.

WVMA COMMENT #2:
Series 21 should only apply to major sources of volatile organic compounds (VOCs).

EPA'S RESPONSE:
WVMA's interpretation of the Clean Air Act as Amended is not completely correct. Section 182(b)(2) requires West Virginia to submit the following:

* Revisions requiring RACT on sources covered by CTG's that EPA issues after enactment of the 1990 Amendments.

* Revisions requiring RACT on <u>all</u> sources, including non-major sources, that are covered by <u>any</u> CTG issue before the date of enactment.

* Revisions requiring RACT on all other <u>major</u> stationary sources of VOC, if no CTG has been issued by EPA. For moderate nonattainment areas, the Clean Air Act defines these sources as being major if potential emissions are greater than 100 tons per year.

WVMA COMMENT #5:
The requirements of Series 21 should be coordinated with the requirements of Title III of the Clean Air Act Amendments, Series 25 and Series 27 of the Commission's regulations, the federal air emissions limits under RCRA, and the federal NSPS regulations.

EPA'S RESPONSE:
Please refer to EPA'S RESPONSE to WVMA COMMENT #6.

WVMA COMMENT #6:
The regulation should indicate that sources implementing MACT or seeking early reductions to receive MACT compliance extensions should be sufficient for purposes of the RACT standards of Series 21.

EPA'S RESPONSE:
According to the Clean Air Act Amendments (CAAA) of 1990, §182(b)(2)(c),(d) and (e), States with moderate and above ozone nonattainment areas are required to submit SIP revisions within two years of enactment (November 15, 1992) that contain certain additional RACT measures. These SIP revisions must require the application of RACT to all sources covered by any existing CTG and to all major sources, even if not covered by a CTG.

Any exemptions to RACT requirements as a result of a source proposing an early reduction program or compliance with a MACT standard must be approved by EPA and the State of West Virginia as equivalent to RACT on a case by case basis. Such an approval must be in the form of a federally enforceable permit or SIP revision.

WVMA COMMENT #7:
Section 40 should be deleted in its entirety.

EPA'S RESPONSE:
This request is unacceptable to EPA, since EPA requires all VOC sources to submit records that document that the source is exempt, or subject to RACT requirements.

SECTION III SPECIFIC COMMENTS

WVMA COMMENT #6:
Sections 4.2; 10.1.d; 11.1.b; 12.1.b; 13.1.b; 14.1.b; 15.1.b; 16.1.b; 17.1.b.1; 18.1.b; 19.1.d; 20.1.b.1; 34.1.a; and 40.1.a - applicability thresholds should not be determined in the absence of control devices.

EPA'S RESPONSE:
EPA defines theoretical potential emissions as before add-on controls, except for surface coating sources using low solvent

coatings. Reductions from add-on controls may be accounted for in applicability determinations if made federally enforceable.

WVMA COMMENT #13:

Sections 10.1.d; 11.1.b; 12.1.b; 13.1.b; 14.1.b; 15.1.b; 16.1.b; 17.1.d; 18.1.b; 19.1.d; 20.1.d; 21.1.b.2; 34.1.a; and 40.1.d - Once-in-always-in provision should be deleted and replaced with a mechanism for certifying exemptions.

EPA'S RESPONSE:

This request is also unacceptable, since EPA policy specifically states that the once-in-always-in concept must apply. If emissions are found above the cutoff at any time, then States must require RACT controls thereafter.

We appreciate the opportunity to respond to the public hearing comments submitted by the West Virginia Manufacturers Association (WVMA). As required by the Clean Air Act Amendments of 1990, our response reflects the necessary changes that need to be made in order to make these VOC regulations federally approvable. Should you have any questions regarding our response, please feel free to call me at (215) 6597-9075 or your staff may contact Ms. Jacqueline Lewis at (215) 597-6863.

Sincerely,

Marcia L. Spink, Chief
Air Programs Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

NOV 18 1991

Mr. Dale Farley, Director
West Virginia Air Pollution
Control Commission
1558 Washington Street, East
Charleston, West Virginia 25311

Dear Mr. Farley:

This letter provides EPA's comments on the General Electric letter to you dated September 18, 1991. General Electric stated that it supports the changes to the proposed Regulation 21 recommended by the West Virginia Manufacturer's Association. These changes would exempt selected sources from emission control requirements of Volatile Organic Compounds if such sources meet the Early Reduction requirements that can enable them to obtain an extension from compliance with certain MACT standards.

General Electric's recommended changes to Regulation 21, as provided for in the company's September 18, 1991 letter, should not be made. The company supported recommendations that additions be made to Sections 37.1, 38.1, 39.1 and 40.1 which state, "...the requirements of this Section do not apply to sources implementing MACT or receiving MACT extensions under Title III of the federal Clean Air Act Amendments (CAAA) of 1990 due to early reduction of emissions." For emission points and processes subject to MACT and RACT, there is no provision in Title I allowing for sources to be exempt from RACT while MACT standards are under consideration. With regard to the Early Reduction Program under Title III, the recommended language is not necessary and goes beyond providing the necessary regulatory flexibility for participation in the Early Reduction Program. As you know. RACT regulations may include a provision for the use of alternative compliance plans and strategies so long as the regulatory language clearly states that such alternative compliance plans and strategies must be approved by both the State and the United States Environmental Protection Agency. Successful participation in the Early Reduction Program requires that an EPA approved, federally enforceable mechanism (document) be issued specifying the reduction control strategy resulting in a 90% or greater reduction in emissions. In appropriate situations, the issuance of that document would satisfy the provision in RACT regulations that an alternative compliance plan must be approved by EPA. Therefore, the recommended language to broadly exempt MACT subject sources from RACT is unnecessary and would jeopardize EPA approval of Regulation 21. Additional rationale for why conformance with the Early Reduction Program does not necessarily assure RACT equivalent reductions is discussed below.

The CAAA of 1990 require the state submittal of federally approvable RACT regulations by November 15, 1992. Sources must comply within 12 months after state adoption. The time frame for the Early Reduction program goes beyond that time and even continues beyond the 1996 ozone attainment date. Furthermore, the baseline emissions to determine required reductions in each of the two programs can be radically different. RACT reductions can be determined from a baseline significantly lower than an Early Reduction baseline. Thus reductions required by Regulation 21 can conceivably be greater than those to be achieved by a source under the Early Reduction program. This could occur at any point in time up to, and possibly beyond, final MACT promulgation.

In conclusion, it is important to state that EPA encourages participation in the Early Reduction Program. We believe that the appropriate regulatory flexibility can certainly be provided in RACT regulations to ensure proper consideration of those Early Reduction Program proposals which include RACT-subject emission points and processes. However, being subject to MACT or participation in the Early Reduction Program does not, in and of itself, constitute a justification for exemption from RACT requirements. If you wish to discuss this matter further, please feel free to contact me at (215) 597-4713 or Joseph W. Kunz at (215) 597-8486.

Sincerely,

Joseph W Kunz

Marcia L. Spink, Chief
Air Programs Branch

STATEMENT OF
THE WEST VIRGINIA MANUFACTURERS ASSOCIATION
REGARDING PROPOSED SERIES 21

November 14, 1991

Members of the Air Pollution Control Commission, and Director Farley:

My name is Robert L. Foster. I am Chairman of the West Virginia Manufacturers Association's Environmental, Safety & Health Committee. I am speaking today on behalf of the West Virginia Manufacturers Association regarding Proposed Series 21.

The significance of Series 21 to manufacturers in West Virginia is obvious. Series 21 covers nearly every imaginable source of Volatile Organic Compounds (VOCs). Director Farley and his staff, and John Benedict in particular, have put forth a tremendous effort to work with all interested parties to improve the original proposed rule filed July 15, 1991. In spite of these efforts, however, the revised Series 21 regulation which has been presented for your consideration today is flawed in two basic respects: (1) no effort has been made to coordinate the requirements of proposed Series 21 with overlapping State and federal regulatory programs; and (2) in a number of instances, proposed Series 21 imposes burdens on regulated sources which are above and beyond the requirements contemplated under Title I of the Clean Air Act Amendments of 1990 (CAAA).

(1) COORDINATION OF REQUIREMENTS

The recordkeeping and monitoring requirements of proposed Series 21 have not been coordinated with the monitoring and recordkeeping requirements of Series 25 and 27 of the Commission's regulations, with the federal air emission standards promulgated under RCRA, or with the federal New Source Performance Standards (NSPS). Failure to coordinate these requirements will lead to unnecessary duplication in the monitoring and reporting of data. To the greatest extent possible, Series 21 should be structured to allow data and reports compiled for purposes of complying with these related air programs to be used in complying with the requirements of Series 21.

In addition, it is noted that one of the major goals of the CAAA is to regulate emissions of toxic air pollutants. Title III of the CAAA requires EPA to promulgate standards covering 40 source categories by November, 1992. The chemical manufacturing industry will be among the first to be subject to standards promulgated under Title III of the CAAA. Control measures and technologies implemented to reduce emissions of toxic VOCs can be expected to also reduce emissions of non-toxic VOCs. Yet, for sources subject to Sections 37, 38, and 39 of proposed Series 21, installation of RACT may not meet the MACT requirements imposed under CAAA Title III,

resulting in economic hardship to industries which are required to install RACT in the short term only to be required to install MACT shortly thereafter. Section 3 of Series 21 should thus be revised to state that sources required to implement MACT standards imposed under Title III of the CAAA are deemed to meet the requirements of Series 21. In addition, Title III of the CAAA provides for a 6-year MACT extension for sources that attain 90% or greater emissions reductions, provided such reductions are achieved before the applicable MACT standard is proposed. To require sources opting for early reductions to also comply with the requirements of Series 21 would defeat the purpose of the early reductions program. Thus, Section 3 of Series 21 should also be revised to state that sources meeting the requirements of the early reductions program are deemed to meet the requirements of Series 21.

(2) REQUIREMENTS OF TITLE I OF THE CLEAN AIR ACT AMENDMENTS OF 1990

The CAAA contemplates an approach under which general criteria (i.e., recovery efficiency) would be set for major sources of VOCs based on reasonably available control measures. For sources covered by a control techniques guideline (CTG) document, EPA's draft General Preamble (6/7/91) for Title I of the CAAA indicated that CTGs represent a recommendation regarding the measures EPA believes are sufficient to constitute RACT. States that revise their State Implementation Plans (SIPs) to incorporate CTG documents will thus generally be justified in relying on the CTG to provide adequate support to warrant approval of the SIP, subject to public comment. The draft General Preamble indicates, however, that states are free to develop RACT requirements on a case-by-case basis. States may even propose less stringent requirements if support is provided to show that the less stringent requirements constitute an appropriate and rational RACT determination under the circumstances. See draft General Preamble at 55. This approach is intended to provide maximum flexibility in recognition of the inherent unfairness of imposing rigid control requirements on existing sources. Under the West Virginia Air Pollution Control Act, no rule or program of the Commission shall be anymore stringent than any federal rule or program except to the limited extent that the Commission first makes a specific written finding for any such departure that there exists scientifically supportable evidence for such rule or program reflecting factors unique to West Virginia or same area thereof. W.Va. Code §16-20-5(4).

In contrast, proposed Series 21 goes beyond the requirements of the CAAA by describing in great detail the steps that must be taken at individual sources to implement RACT, along with rigid monitoring, recordkeeping, and reporting requirements. proposed Series 21 also goes beyond the requirements of the Clean Air Act in subjecting a number of insignificant sources of VOCs to regulation. For example, various sections of the proposed regulation contain a "once-in-always-in" provision, under which any source which becomes subject to a

control requirement of Series 21 remains subject to the provisions of Series 21, even if throughput or emissions later fall below the applicability threshold due to process changes. As a result of these once-in-always-in provisions, operators would continue to be regulated under Series 21 even if VOC emissions were ceased (e.g., by using water-based coatings in place of solvent-based coatings). In addition, the applicability thresholds for a number of sources covered under Series 21 must be determined in the absence of control devices. This is despite the fact that a more true indication of a source's potential to emit is obtained when applicability thresholds are determined with control devices in place. The Director has incorporated these provisions throughout the proposed regulation based on guidance received from U.S. EPA in the form of a "model regulation" and a document entitled "*Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations*." These guidance documents must be kept in their proper perspective. The guidance documents received from U.S. EPA have not been the subject of notice-and-comment rulemaking, and thus do not have the force of a final legislative rule. These documents serve the same function as the CTG documents described above: They are merely guidelines or policy statements which indicate certain provisions are acceptable in developing a State's VOC regulations, but do not indicate that deviations from the guidelines will result in rejection of the SIP. This is especially true when alternate provisions are adopted which address U.S. EPA's underlying concerns. With regard to the once-in-always-in provisions, the WVMA has suggested that an annual certification requirement be implemented to ensure that sources implementing process changes which reduce VOC emissions below applicability thresholds do not subsequently revert back to their former processes.

Finally, the WVMA also notes that proposed Series 21 contains certain "housekeeping" provisions which are not based on either the requirements of the CAAA or on guidance from U.S. EPA. The most obvious example of such a housekeeping provision is Section 8 of the proposed regulation. Section 8 prohibits the disposal of more than 6.8 kilograms (15 lbs.) of any VOC or VOC-containing material in a manner that would permit the evaporation of VOC into the air. Despite the comments of the WVMA, this provision has not been revised to indicate the types of activities which are deemed to constitute disposal. Section 8 has been revised only to indicate that certain sources (e.g., surface impoundments, pits, wastewater treatment plants) are exempt from its requirements. The Director has also failed to clarify the issue of whether the 6.8 kg limit applies to the amount of VOCs which evaporate into the air, or to the amount of VOC-containing materials disposed.

Regardless of the intended scope of the provision, it is clear that Section 8 will not lead to significant reductions in emissions of VOCs. In manufacturing operations, VOCs and VOC-containing materials that are disposed on a routine basis (e.g., rags, filters) would generally not contain 6.8 kg of VOCs. Thus, in the majority of cases,

Section 8 would merely have the effect of imposing unnecessary recordkeeping requirements on regulated entities. Furthermore, even in the rare instances in which large volumes of VOC-containing materials are disposed (e.g., soils contaminated as result of spills), Section 8 will merely have the effect of temporarily delaying the release of VOCs to the air. In circumstances involving the disposal of materials containing over 6.8 kg of VOCs, Section 8 is apparently intended to prohibit the use of open containers during disposal. Section 8 fails to recognize, however, that even sealed containers must be disposed of in some manner. If transported to landfills, the sealed containers will likely be emptied or otherwise punctured, thus releasing VOCs to the air. Even if the sealed containers are landfilled withot being punctured, it can be expected that the containers will eventually leak and thus release the VOCs contained therein. Thus, the only practical effect of Section 8 would be to increase the cost of doing business, with no corresponding benefit to the environment. In addition, as previously stated, Section 8 is a housekeeping provision which is not required under the federal program. Thus, Section 8 falls squarely within the prohibition of W.Va. Code §16-20-5(4) against the promulgation of rules which are more stringent than counterpart federal rules or programs. For these reasons, Section 8 should be deleted from Series 21.

On behalf of the WVMA, we express our appreciation for the opportunity to present this statement. Those of us who are here today on behalf of the WVMA stand ready to answer any questions the Commission may have regarding these proposals.

West Virginia Department of
Commerce, Labor & Environmental Resources
Air Pollution Control Commission

1558 Washington Street, East
Charleston, West Virginia 25311

Telephone: (304)348-4022
or (304)348-3286
Fax: (304)348-3287

AGENDA

WEST VIRGINIA AIR POLLUTION CONTROL COMMISSION
Conference Room

1558 Washington Street, East
Charleston, West Virginia 25311

December 16, 1991
9:00 a.m.

I. CONSIDERATION OF PROPOSED CONSENT ORDERS - COMPLIANCE PLANS UNDER REGULATION 27

1. Occidental Chemical Corporation - Belle
2. E. I. DuPont De Nemours & Co., Inc. - Belle
3. ARCO Chemical Company - South Charleston

II. COMMISSION MEETING

1. Further Consideration of Proposed Regulation 21 (45CSR21) - "Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds".
2. Further Consideration of Variance Request by Wheeling Pittsburgh Steel Corporation - Coke Oven Gas Desulfurization Plant.
3. Consideration of Minutes of October 30, 1991 and November 14, 1991 meetings.
4. Director's Comments.
5. Such other business as the Commission deems timely and appropriate.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

DEC 16 1991

Mr. G. Dale Farley, Director
West Virginia Air Pollution Control
Commission
1558 Washington Street, East
Charleston, West Virginia 25311

Dear Mr. Farley:

These comments serve to respond to your December 4, 1991, telefax requesting that EPA review additional changes to the West Virginia Air Pollution Control Commission proposed VOC RACT regulations.

1. The proposed language regarding the once-in-always-in provision needs to be amended as follows:

- The word "unless" should be deleted from section 3.5.

- Additional language should be added to section 3.5.a., to reflect the following:

  This regulation does not apply to a facility or source that is subject to a permit or order (issued before the effective date of this regulation) enforceable by the commission and the U.S. EPA that establishes throughput or VOC emission limits which are below the applicability threshold.

- Section 3.5.b., relating to certification needs to be deleted, because a facility or source can only apply for a permit or order before the effective date of this regulation.

2. In section 3.9.b., the proposed language regarding a facility or source that complies with maximum achievable control technology (MACT) standards or enters into the early reductions program under Title III of the Clean Air Act Amendments of 1990, needs to be amended to reflect the following:

- Any facility or sources subject to the requirements of this regulation cannot be exempted from RACT by complying with a MACT standard or entering into an early reductions program.

- If a facility or source enters into an early reductions program or complies with a MACT standard, it may submit this control strategy as an alternative to the RACT requirement.

- This alternative control plan must be approved by EPA and the State of West Virginia as equivalent to RACT on a case-by-case basis. Such an approval must be in the form of a federally enforceable permit or SIP revision.

3. The proposed language in section 45-21-9, regarding extended compliance periods needs to be amended as follows:

- The language deleted in section 9.1, (NOTE), must be reinserted to ensure that any order or program is issued in accordance with section 9.1 and with the applicable provisions of the Clean Air Act Amendments of 1990. The NOTE must be amended to include all regulated sources.

Should you have any questions regarding our comments, please feel free to contact me at (215) 597-4556 or your staff may contact Ms. Jacqueline Lewis at (215) 597-6863.

Sincerely,

David L. Arnold, Chief
Program Planning Section

WEST VIRGINIA MANUFACTURERS ASSOCIATION

SUITE 503
405 CAPITOL STREET
CHARLESTON, WV 25301
TELEPHONE (304) 342-2123

December 16, 1991

West Virginia Air Pollution
Control Commission
1558 Washington Street, East
Charleston, WV 25311

Re: Regulation 21; Volatile Organic Compounds

Dear Commissioners:

As the Commission considers the final language to be included in its proposed Regulation 21 dealing with volatile organic compounds, the West Virginia Manufacturers Association wishes to take this opportunity to express our support of the Commission in its efforts to fashion a reasonable and effective approach to the control of VOC's in the non-attainment areas of our state. We, as I am sure the Commission does, recognize that the impact of this regulation on sources in those areas throughout the state will be costly and serious. The time frames for achieving compliance are short, one year. Because of this very short time frame, we are most concerned that any facility which wishes to develop an alternative compliance plan which does not follow any of the "cookbook" suggestions for control techniques approaches listed in the rule will have to gain the approval of both this Commission and the Region III U.S. EPA. Because the federal agency has been historically very slow in processing review of consent orders and inclusion of them in the federal rules as part of a State Implementation Plan revision, we are very concerned about the possibility that those facilities using such alternative plans will have made commitments and had to move forward in their implementation in order to meet the requirements of state law before EPA has even agreed that the approach is acceptable. Expecting the process to be completed through promulgation in the Federal Register and ultimate approval by EPA within a one-year time frame is not realistic based on past experience.

As a result, for those facilities which will be in this position, we urge the Commission and its staff to lend full support and assistance to those facilities once their plans are approved by the Commission. It will only be through a concerted effort by the owner and operator of the source and the APCC itself that timely review and approval by EPA Region III will even be conceivable under the requirements of this proposed rule.

To put the impact of this rule in clear perspective, it must be remembered that this rule will be applied to sources based on their uncontrolled potential to emit. This is a distinct departure from all other rules under the state and federal programs which look at a source's potential to emit with controls in place in determining whether or not the source is a "major source" for purposes of regulation. The result of this is that very many more facilities will be swept within the scope of the rule than would otherwise normally be the case. Accordingly, many small businesses and industries will be impacted by this regulation. It is especially important that these issues be handled both practicably and expeditiously by the state and by EPA in order to minimize the possibility of needless adverse economic impact on facilities seeking to comply with this rule.

Again, on behalf of the Manufacturers, I wish to express our appreciation for the open manner in which the Commission has attempted to deal with this lengthy and complex regulation which has such serious implications for many of the state's manufacturing operations.

Very truly yours,

Robert L. Foster

Robert L. Foster
Chairman, Environment,
Safety & Health Committee

RLF:paj

cc: G. Dale Farley, Director