# WEST VIRGINIA
# SECRETARY OF STATE
**KEN HECHLER**
# ADMINISTRATIVE LAW DIVISION

Form #6

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FILED
APR 27 7 55 AM '94
OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

## NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE RULE AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AGENCY: WV Air Pollution Control Commission TITLE NUMBER: 45CSR16

AMENDMENT TO AN EXISTING RULE: YES X , NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 45CSR16

TITLE OF RULE BEING AMENDED: "Standards of Performance for New Stationary Sources"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

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THE ABOVE RULE HAS BEEN AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AUTHORIZATION IS CITED IN (house or senate bill number) S.B. 1005

SECTION 64-3-1(ee), PASSED ON March 16, 1994.

THIS RULE IS FILED WITH THE SECRETARY OF STATE. THIS RULE BECOMES EFFECTIVE ON THE FOLLOWING DATE: April 27, 1994

Authorized Signature

11.20

# LEGISLATIVE HISTORY ABSTRACT
# 45CSR16

## STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Division of Environmental Protection
Office of Air Quality
West Virginia Air Pollution Control Commission
Senate Bill 1005, Section 64-3-1(ee)

| | |
|---|---|
| June 02, 1993 | Initial Filing with Secretary of State |
| June 03, 1993 | Initial Filing with Legislative Rule-Making Review Committee |
| July 06, 1993 | Held Public Hearing |
| Aug 09, 1993 | Public Hearing and Agency Approval |
| Aug 13, 1993 | Agency Approved Rule Filed with Secretary of State |
| Aug 13, 1993 | Agency Approved Rule Filed with Legislative Rule-Making Review Committee |
| Nov 16, 1993 | 45 CSR 16 was on Agenda for Legislative Rule-Making Review Committee |
| Nov 16, 1993 | The Legislative Rule-Making Review Committee recommended that the West Virginia Legislature Authorize the Agency to Promulgate Legislative Rule 45 CSR 16 as Originally Filed. |
| March 16, 1994 | Passed the West Virginia Legislature |
| April 06, 1994 | Governor Signed Senate Bill 1005 |
| April 26, 1994 | Public Hearing for Final Filing of Legislative Rule |
| April 26, 1994 | Final Filing with Secretary of State |
| April 26, 1994 | Effective Date of Rule |

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OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

45CSR16

TITLE 45
LEGISLATIVE RULES
WEST VIRGINIA AIR POLLUTION CONTROL COMMISSION

## SERIES 16
## STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

### §45-16-1. General.

1.1. Scope. -- This ~~regulation~~rule adopts standards of performance for new stationary sources promulgated by the United States Environmental Protection Agency under the Federal Clean Air Act, regulating the construction or modification of new stationary sources. It is the intent of the Commission to adopt these standards by reference. It is also the intent of the Commission to adopt associated reference methods, performance specifications and other test methods which are appended to such standards.

1.2. Authority. -- ~~This regulation is issued under the authority of the West Virginia Code, Chapter 16, Article 20, Section 5. This regulation relates to West Virginia Code, Chapter 16, Article 20, Sections 1 through 13 inclusive~~W. Va. Code §16-20-5.

1.3. Filing Date. -- ~~April 25, 1990~~August 13, 1993.

1.4. Effective Date. -- ~~April 25, 1990~~

~~1.5. Type. — This regulation is a legislative rule as defined in West Virginia Code, Chapter 29A, Article 2.~~

### §45-16-2. Requirements.

2.1. No person may construct, modify, or operate or cause to be constructed, modified, or operated a New Source Performance Standard (NSPS) source which results or will result in violations of this regulation.

### §45-16-3. Adoption of Standards.

3.1. Standards. -- Standards of performance for new stationary sources including associated reference methods, performance specifications and other test methods which are appended to such standards promulgated by the United States Environmental Protection Agency pursuant to ~~Section 111(b) of the Federal Clean Air Act~~42 U.S.C. 7411(b) [C.A.A. §111(b)] as of ~~July 1, 1988~~May 1, 1993, and contained in ~~40 CFR Part 60~~40CFR60 are hereby adopted in their entirety and incorporated herein by reference, except as follows:

a. Part 60.9 is amended to provide that information shall be available to the public in accordance with ~~Chapter 16, Article 20, and Chapter 29B, Article 1 of the Code of West Virginia, and~~W. Va. Code 16-20-1, et seq., W. Va. Code 29B-1-1, et seq., and 45CSR31.

2.60

b. Sub-parts B, C, Ca, Cb and Ea of 40 CFR ~~Part~~-60 shall be excluded.

### §45-16-4. ~~Director~~Chief.

4.1. Any and all references in said 40 CFR ~~part~~ 60 to the "Administrator" is amended to be the ~~"Director" of the West Virginia Air Pollution Control Commission~~"Chief" of the Office of Air Quality of the Division of Environmental Protection" except in the following references which such references shall remain "Administrator of the United States Environmental Protection Agency":

a. Part 60.2.

b. Part 60.4.

c. Part 60.8(b)(2).

d. Part 60.8(b)(3).

e. That sentence of part 60.8(b) which deals with the authority of the Administrator to require testing under Section 114 of the Clean Air Act.

f. Part 60.11(e).

g. Part 60.13(c).

h. part 60.45(a).

i. Part 60.195(b).

j. Part 60.332(a).

k. Part 60.335(a)(1)(i).

### §45-16-5. Permits.

5.1. Nothing contained in this adoption by reference shall be construed or inferred to mean that permit requirements in accordance with applicable ~~regulations~~rules shall be in any way be limited or inapplicable.

### §45-16-6. Inconsistency Between Regulations.

6.1. In the event of any inconsistency between this ~~regulation~~rule and any other existing ~~regulation~~rule of the Commission, such inconsistency shall be resolved by the determination of the ~~Director~~Chief and such determination shall be based upon the application of the more stringent provision, term, condition, method, rule or regulation.

# code of federal regulations

## Protection of Environment

## 40

PARTS 53 TO 60
Revised as of July 1, 1992

$36.00

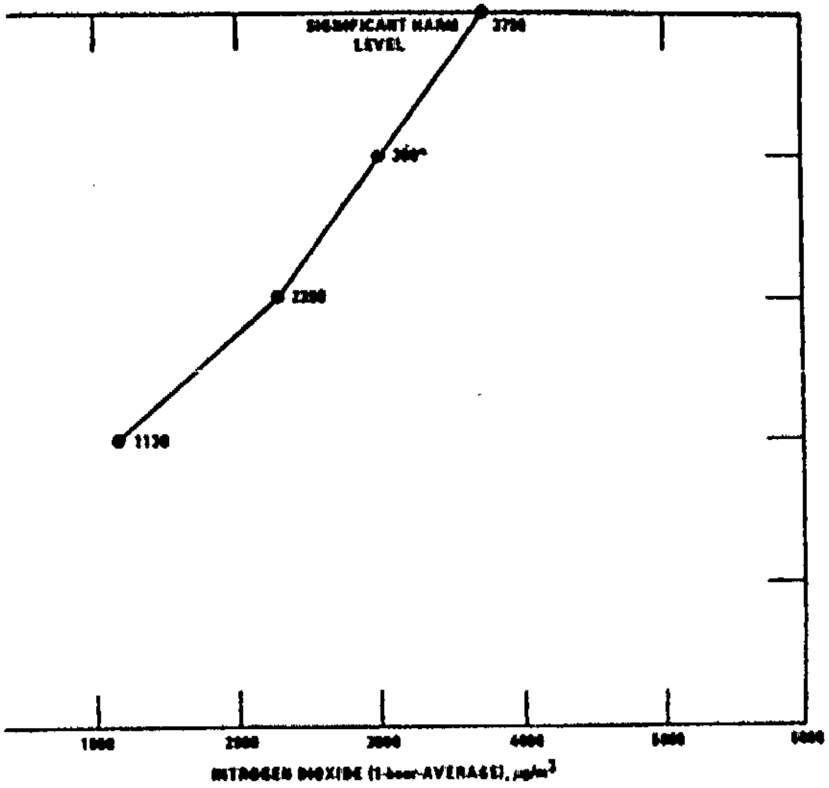

Figure 5. PSI function for nitrogen dioxide.

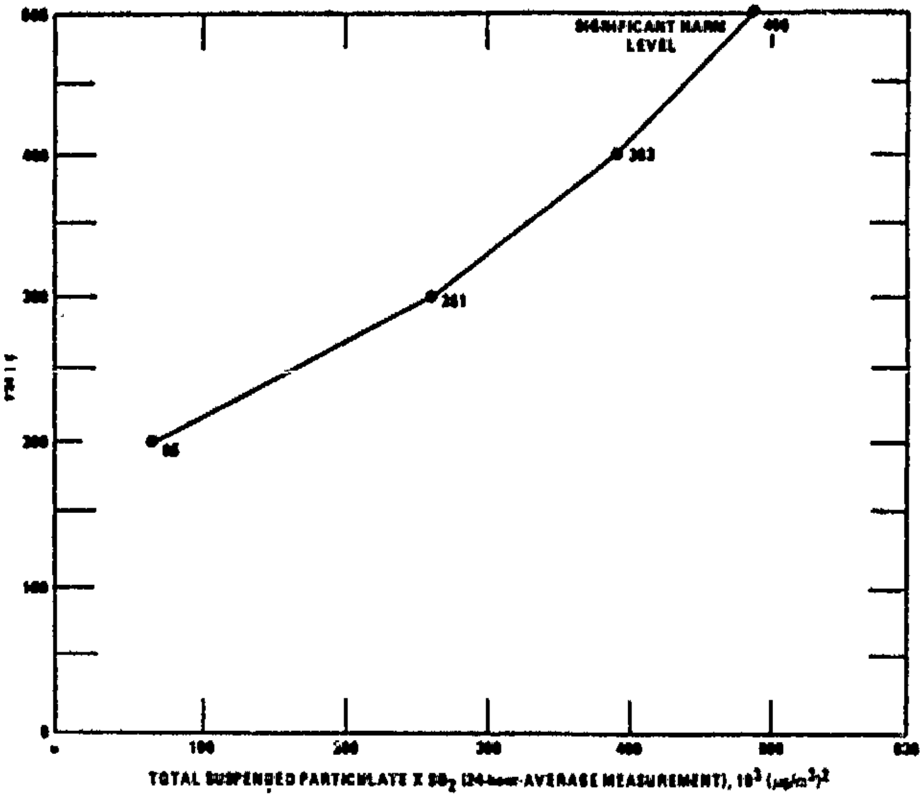

Figure 6. PSI function for product of total suspended particulate and sulfur dioxide.

[44 FR 27571, May 10, 1979; 44 FR 65070, Nov. 9, 1979; 44 FR 72592, Dec. 14, 1979, as amended at 51 FR 95600, Mar. 19, 1986; 52 FR 24749, 24750, July 1, 1987]

## PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

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### Subpart B—Adoption and Submittal of State Plans for Designated Facilities

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25 Emission inventories, source surveillance, reports.
26 Legal authority.
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28 Plan revisions by the State.
29 Plan revisions by the Administrator.

### Subpart C—Emission Guidelines and Compliance Times

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### part Ca—Emissions Guidelines and Compliance Times for Municipal Waste Combustors

30a Scope.
31a Definitions.
32a Designated facilities.
33a Emission guidelines for municipal waste combustor metals.
34a Emission guidelines for municipal waste combustor organics.
35a Emission guidelines for municipal waste combustor acid gases.
36a Emission guidelines for municipal waste combustor operating practices, training, and municipal waste combustor operator certification.
37a [Reserved]
38a Compliance and performance testing and compliance times.
39a Reporting and recordkeeping guidelines.

### part Cb—Emission Guidelines and Compliance Times for Sulfuric Acid Production Units

30b Designated facilities.
31b Emission guidelines.
32b Compliance times.

### part D—Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971

40 Applicability and designation of affected facility.
41 Definitions.
42 Standard for particulate matter.
43 Standard for sulfur dioxide.
44 Standard for nitrogen oxides.
45 Emission and fuel monitoring.
46 Test methods and procedures.
47 Innovative technology waivers; waiver of sulfur dioxide standards of performance for new stationary sources for Homer City Unit No. 3 under section 111(j) of the Clean Air Act for Multi-Steam Coal Cleaning System.

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60.40a Applicability and designation of affected facility.
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60.43a Standard for sulfur dioxide.
60.44a Standard for nitrogen oxides.
60.45a Commercial demonstration permit.
60.46a Compliance provisions.
60.47a Emission monitoring.
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60.43b Standard for particulate matter.
60.44b Standard for nitrogen oxides.
60.45b Compliance and performance test methods and procedures for sulfur dioxide.
60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.
60.47b Emission monitoring for sulfur dioxide.
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### Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

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60.43c Standard for particulate matter.
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60.51 Definitions.
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### Subpart Ea—Standards of Performance for Municipal Waste Combustors

60.50a Applicability and delegation of authority.
60.51a Definitions.
60.52a Standard for municipal waste combustor metals.
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60.54a Standard for municipal waste combustor acid gases.
60.55a Standard for nitrogen oxides.
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60.100 Applicability, designation of affected facility, and reconstruction.
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60.103 Standard for carbon monoxide.
60.104 Standards for sulfur oxides.
60.105 Monitoring of emissions and operations.
60.106 Test methods and procedures.
60.107 Reporting and recordkeeping requirements.
60.108 Performance test and compliance provisions.
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60.110 Applicability and designation of affected facility.
60.111 Definitions.
60.112 Standard for volatile organic compounds (VOC).
60.113 Monitoring of operations.

### Subpart Ka—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

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60.111b Definitions.
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60.113b Testing and procedures.
60.114b Alternative means of emission limitation.
60.115b Recordkeeping and reporting requirements.
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60.117b Delegation of authority.

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60.122 Standard for particulate matter.
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**Subpart M—Standards of Performance for Secondary Brass and Bronze Production Plants**

60.130 Applicability and designation of affected facility.
60.131 Definitions.
60.132 Standard for particulate matter.
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**Subpart N—Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973**

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60.141 Definitions.
60.142 Standard for particulate matter.
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60.152 Standard for particulate matter.
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60.161 Definitions.
60.162 Standard for particulate matter.
60.163 Standard for sulfur dioxide.
60.164 Standard for visible emissions.
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60.170 Applicability and designation of affected facility.
60.171 Definitions.
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60.173 Standard for sulfur dioxide.
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60.180 Applicability and designation of affected facility.
60.181 Definitions.
60.182 Standard for particulate matter.
60.183 Standard for sulfur dioxide.
60.184 Standard for visible emissions.
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**Subpart S—Standards of Performance for Primary Aluminum Reduction Plants**

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60.192 Standard for fluorides.
60.193 Standard for visible emissions.
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**Subpart T—Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants**

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60.210 Applicability and designation of affected facility.
60.211 Definitions.
60.212 Standard for fluorides.
60.213 Monitoring of operations.
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60.221 Definitions.
60.222 Standard for fluorides.
60.223 Monitoring of operations.
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**Subpart W—Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants**

60.230 Applicability and designation of affected facility.
60.231 Definitions.
60.232 Standard for fluorides.
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60.241 Definitions.
60.242 Standard for fluorides.
60.243 Monitoring of operations.
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60.251 Definitions.
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60.262 Standard for particulate matter.
60.263 Standard for carbon monoxide.
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60.272 Standard for particulate matter.
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60.274 Monitoring of operations.
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60.272a Standard for particulate matter.
60.273a Emission monitoring.
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60.283 Standard for total reduced sulfur (TRS).
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60.302 Standard for particulate matter.
60.302 Test methods and procedures.
60.303 Test methods and procedures.
60.304 Modifications.

### Subpart EE—Standards of Performance for Surface Coating of Metal Furniture

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60.312 Standard for volatile organic compounds.
60.313 Performance tests and compliance provisions.
60.314 Monitoring of emissions and operations.
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### Subpart HH—Standards of Performance for Lime Manufacturing Plants

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60.341 Definitions.
60.342 Standard for particulate matter.
60.343 Monitoring of emissions and operations.
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60.372 Standards for lead.
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60.383 Reconstruction.
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60.390 Applicability and designation of affected facility.
60.391 Definitions.
60.392 Standards for volatile organic compounds.
60.393 Performance test and compliance provisions.
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60.396 Reference methods and procedures.
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60.401 Definitions.
60.402 Standard for particulate matter.
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### Subpart PP—Standards of Performance for Ammonium Sulfate Manufacture

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60.421 Definitions.
60.422 Standards for particulate matter.
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60.430 Applicability and designation of affected facility.
60.431 Definitions and notations.
60.432 Standard for volatile organic compounds.
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60.434 Monitoring of operations and recordkeeping.
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### Subpart RR—Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations

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60.441 Definitions and symbols.
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### Subpart SS—Standards of Performance for Industrial Surface Coating: Large Appliances

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60.533 Compliance and certification.
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60.539 Hearing and appeal procedures.
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60.545 Recordkeeping requirements.
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### Subpart EEE [Reserved]

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60.583 Test methods and procedures.
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### Subpart GGG—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

60.590 Applicability and designation of affected facility.
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### Subpart HHH—Standards of Performance for Synthetic Fiber Production Facilities

60.600 Applicability and designation of affected facility.
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60.602 Standard for volatile organic compounds.
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### Subpart III—Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes

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60.611 Definitions.
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60.613 Monitoring of emissions and operations.
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APPENDICES TO PART 60

AUTHORITY: 42 U.S.C. 7401, 7411, 7414, 7416, and 7601.

SOURCE: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

## Subpart A—General Provisions

### § 60.1 Applicability.

(a) Except as provided in subparts B and C, the provisions of this part apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

(b) Any new or revised standard of performance promulgated pursuant to section 111(b) of the Act shall apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of such new or revised standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

[40 FR 53346, Nov. 17, 1975, as amended at 55 FR 51382, Dec. 13, 1990]

### § 60.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

*Act* means the Clean Air Act (42 U.S.C. 1857 *et seq.*, as amended by Pub. L. 91-604, 84 Stat. 1676).

*Administrator* means the Administrator of the Environmental Protection Agency or his authorized representative.

*Affected facility* means, with reference to a stationary source, any apparatus to which a standard is applicable.

*Alternative method* means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for his determination of compliance.

*Capital expenditure* means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the existing facility's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.

*Commenced* means, with respect to the definition of *new source* in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

*Construction* means fabrication, erection, or installation of an affected facility.

*Continuous monitoring system* means the total equipment, required under the emission monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

*Equivalent method* means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

*Excess Emissions and Monitoring Systems Performance Report* is a report that must be submitted periodically by a source in order to provide data on its compliance with stated emission limits and operating parameters, and on the performance of its monitoring systems.

*Existing facility* means, with reference to a stationary source, any apparatus of the type for which a standard is promulgated in this part, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type.

*Isokinetic sampling* means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

*Malfunction* means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

*Modification* means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

*Monitoring device* means the total equipment, required under the monitoring of operations sections in applicable subparts, used to measure and record (if applicable) process parameters.

*Nitrogen oxides* means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in this part.

*One-hour period* means any 60-minute period commencing on the hour.

*Opacity* means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

*Owner or operator* means any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.

*Particulate matter* means any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable subpart, or an equivalent or alternative method.

*Proportional sampling* means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

*Reference method* means any method of sampling and analyzing for data; and description of corrective action taken.

(4) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(5) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.

(6) Identification of times when hourly averages have been obtained based on manual sampling methods.

(7) Identification of the times when the pollutant concentration exceeded full span of the CEMS.

(8) Description of any modifications to the CEMS which could affect the ability of the CEMS to comply with Performance Specification 2 or 3.

(9) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(m) For each affected facility subject to the sulfur dioxide standards under § 60.42b for which the minimum amount of data required under § 60.47b(f) were not obtained during a calendar quarter, the following information is reported to the Administrator in addition to that required under paragraph (k) of this section:

(1) The number of hourly averages available for outlet emission rates and inlet emission rates.

(2) The standard deviation of hourly averages for outlet emission rates and inlet emission rates, as determined in Method 19, section 7.

(3) The lower confidence limit for the mean outlet emission rate and the upper confidence limit for the mean inlet emission rate, as calculated in Method 19, section 7.

(4) The ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as determined in Method 19, section 7.

(n) If a percent removal efficiency by fuel pretreatment (i.e., % $R_f$) is used to determine the overall percent reduction (i.e., % $R_o$) under § 60.45b, the owner or operator of the affected facility shall submit a signed statement with the quarterly report:

(1) Indicating what removal efficiency by fuel pretreatment (i.e., % $R_f$) was credited for the calendar quarter;

(2) Listing the quantity, heat content, and date each pretreated fuel shipment was received during the previous calendar quarter; the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the previous calendar quarter;

(3) Documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit.

(4) Including a signed statement from the owner or operator of the fuel pretreatment facility certifying that the percent removal efficiency achieved by fuel pretreatment was determined in accordance with the provisions of Method 19 (appendix A) and listing the heat content and sulfur content of each fuel before and after fuel pretreatment.

(o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.

(p) The owner or operator of an affected facility described in § 60.44b(j) or (k) shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date,

(2) The number of hours of operation, and

(3) A record of the hourly steam load.

(q) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) shall submit to the Administrator on a quarterly basis:

(1) The annual capacity factor over the previous 12 months,

(2) The average fuel nitrogen content during the quarter, if residual oil was fired; and

(3) If the affected facility meets the criteria described in § 60.44b(j), the results of any nitrogen oxides emission tests required during the quarter, the hours of operation during the quarter, and the hours of operation since the last nitrogen oxides emission test.

(r) The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil under § 60.42b(j)(2) shall obtain and maintain at the affected facility fuel receipts from the fuel supplier which certify that the oil meets the definition of distillate oil as defined in § 60.41b. For the purposes of this section, the oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Quarterly reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition was combusted in the affected facility during the preceding quarter.

(Approved by the Office of Management and Budget under control number 2060-0135)

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51820, 51825, Dec. 18, 1989]

## Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

SOURCE: 55 FR 37683, Sept. 12, 1990, unless otherwise noted.

### § 60.40c Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

### § 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

*Annual capacity factor* means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

*Coal* means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society for Testing and Materials in ASTM D388-77, "Standard Specification for Classification of Coals by Rank" (incorporated by reference—see § 60.17); coal refuse; and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are included in this definition for the purposes of this subpart.

*Coal refuse* means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

*Cogeneration steam generating unit* means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

*Combined cycle system* means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

*Conventional technology* means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specification for Fuel Oils" (incorporated by reference—see § 60.17).

*Dry flue gas desulfurization technology* means a sulfur dioxide ($SO_2$) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

*Duct burner* means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

*Emerging technology* means any $SO_2$ control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

*Fluidized bed combustion technology* means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

*Fuel pretreatment* means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

*Heat input* means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

*Heat transfer medium* means any material that is used to transfer heat from one point to another point.

*Maximum design heat input capacity* means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

*Natural gas* means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835-86, "Standard Specification for Liquefied Petroleum Gases" (incorporated by reference—see § 60.17).

*Noncontinental area* means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

*Oil* means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

*Potential sulfur dioxide emission rate* means the theoretical $SO_2$ emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

*Process heater* means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

*Residual oil* means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specification for Fuel Oils" (incorporated by reference—see § 60.17).

*Steam generating unit* means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

*Steam generating unit operating day* means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

*Wet flue gas desulfurization technology* means an $SO_2$ control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

*Wet scrubber system* means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or $SO_2$.

*Wood* means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

### § 60.42c Standard for sulfur dioxide.

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, the owner the operator of an affected facility that combusts only coal shall neither: (1) cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 10 percent (0.10) of the potential $SO_2$ emission rate (90 percent reduction); nor (2) cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 90 percent $SO_2$ reduction requirement specified in this paragraph and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 20 percent (0.20) of the potential $SO_2$ emission rate (80 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is fired with coal refuse, the affected facility is subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 90 percent $SO_2$ reduction requirement specified in paragraph (a) of this section and the emission limit determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of $SO_2$ emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 50 percent (0.50) of the potential $SO_2$ emission rate (50 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 260 ng/J (0.60 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent $SO_2$ reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under this paragraph.

(1) Affected facilities that have a heat input capacity of 22 MW (75 million Btu/hr) or less.

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a Federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area.

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

(d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of the following:

(1) The percent of potential $SO_2$ emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel,

(ii) Has a heat input capacity greater than 22 MW (75 million Btu/hr), and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$E_s=(K_aH_a+K_bH_b+K_cH_c)/H_a+H_b+H_c)$$

where:

$E_s$ is the $SO_2$ emission limit, expressed in ng/J or lb/million Btu heat input,

$K_a$ is 520 ng/J (1.2 lb/million Btu),

$K_b$ is 260 ng/J (0.60 lb/million Btu),

$K_c$ is 215 ng/J (0.50 lb/million Btu),

$H_a$ is the heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) (million Btu)

$H_b$ is the heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (million Btu)

$H_c$ is the heat input from the combustion of oil, in J (million Btu).

(f) Reduction in the potential $SO_2$ emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential $SO_2$ emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion $SO_2$ control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), or (3) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f)(1), (2), or (3), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(3) Coal-fired facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(i) The $SO_2$ emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

### § 60.43c Standard for particulate matter.

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.05 lb/million Btu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/million Btu) heat imput if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

### § 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

(a) Except as provided in paragraphs (g) and (h) of this section and in § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and $SO_2$ emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) and § 60.8, compliance with the percent reduction requirements and $SO_2$ emission limits under § 60.42c is based on the average percent reduction and the average $SO_2$ emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and $SO_2$ emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 are used to determine the hourly $SO_2$ emission rate ($E_{ho}$) and the 30-day average $SO_2$ emission rate ($E_{ao}$). The hourly averages used to compute the 30-day averages are obtained from the continuous emission monitoring system (CEMS). Method 19 shall be used to calculate $E_{ao}$ when using daily fuel sampling or Method 6B.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted $E_{ho}$ ($E_{ho}{}^{o}$) is used in Equation 19-19 of Method 19 to compute the adjusted $E_{ao}$ ($E_{ao}{}^{o}$). The $E_{ho}{}^{o}$ is computed using the following formula:

$$E_{ho}{}^{o}=[E_{ho}-E_w(1-X_k)]/X_k$$

where:

$E_{ho}{}^{o}$ is the adjusted $E_{ho}$, ng/J (lb/million Btu)

$E_{ho}$ is the hourly $SO_2$ emission rate, ng/J (lb/million Btu)

$E_w$ is the $SO_2$ concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9, ng/J (lb/million Btu). The value $E_w$ for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure $E_w$ if the owner or operator elects to assume $E_w=0$.

$X_k$ is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(2) The owner or operator of an affected facility that qualifies under the provisions of § 60.42c(c) or (d) [where percent reduction is not required] does not have to measure the parameters $E_w$ or $X_k$ if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19.

(f) Affected facilities subject to the percent reduction requirements under § 60.42c(a) or (b) shall determine compliance with the $SO_2$ emission limits under § 60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential $SO_2$ emission rate is computed using the following formula:

$$\%P_s=100(1-\%R_g/100)(1-\%R_f/100)$$

where

$\%P_s$ is the percent of potential $SO_2$ emission rate, in percent

$\%R_g$ is the $SO_2$ removal efficiency of the control device as determined by Method 19, in percent

$\%R_f$ is the $SO_2$ removal efficiency of fuel pretreatment as determined by Method 19, in percent

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_g{}^{o}$) is computed from $E_{ao}{}^{o}$ from paragraph (e)(1) of this section and an adjusted average $SO_2$ inlet rate ($E_{ai}{}^{o}$) using the following formula:

$$\%R_g{}^{o}=100\ [1.0-E_{ao}{}^{o}/E_{ai}{}^{o})]$$

where:

$\%R_g{}^{o}$ is the adjusted $\%R_g$, in percent

$E_{ao}{}^{o}$ is the adjusted $E_{ao}$, ng/J (lb/million Btu)

$E_{ai}{}^{o}$ is the adjusted average $SO_2$ inlet rate, ng/J (lb/million Btu)

(ii) To compute $E_{ai}{}^{o}$, an adjusted hourly $SO_2$ inlet rate ($E_{hi}{}^{o}$) is used. The $E_{hi}{}^{o}$ is computed using the following formula:

$$E_{hi}{}^{o}=[E_{hi}-E_w(1-X_k)]/X_k$$

where:

$E_{hi}{}^{o}$ is the adjusted $E_{hi}$, ng/J (lb/million Btu)

$E_{hi}$ is the hourly $SO_2$ inlet rate, ng/J (lb/million Btu)

$E_w$ is the $SO_2$ concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19, ng/J (lb/million Btu). The value $E_w$ for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure $E_w$ if the owner or operator elects to assume $E_w=0$.

$X_k$ is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).

(h) For affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the $SO_2$ standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under § 60.48c(f)(1), (2), or (3), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the $SO_2$ standards under § 60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour averaged firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(j) The owner or operator of an affected facility shall use all valid $SO_2$ emissions data in calculating $\%P_s$ and $E_{ho}$ under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under § 60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$ or $E_{ho}$ pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

### § 60.45c Compliance and performance test methods and procedures for particulate matter.

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods.

(1) Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry square cubic meters (dscm) [60 dry square cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(2) Method 3 shall be used for gas analysis when applying Method 5, Method 5B, of Method 17.

(3) Method 5, Method 5B, or Method 17 shall be used to measure the concentration of PM as follows:

(i) Method 5 may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 2.1 and 2.3 of Method 5B may be used in Method 17 only if Method 17 is used in conjuction with a wet scrubber system. Method 17 shall not be used in conjuction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B may be used in conjunction with a wet scrubber system.

(4) For Method 5 or Method 5B, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 °C (320 °F).

(5) For determination of PM emissions, an oxygen or carbon dioxide measurement shall be obtained simultaneously with each run of Method 5, Method 5B, or Method 17 by traversing the duct at the same sampling location.

(6) For each run using Method 5, Method 5B, or Method 17, the emission rates expressed in ng/J (lb/million Btu) heat input shall be determined using:

(i) The oxygen or carbon dioxide measurements and PM measurements obtained under this section,

(ii) The dry basis F-factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 (appendix A).

(7) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under § 60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

### § 60.46c Emission monitoring for sulfur dioxide

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the $SO_2$ emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring $SO_2$ concentrations and either oxygen or carbon dioxide concentrations at the outlet of the $SO_2$ control device (or the outlet of the steam generating unit if no $SO_2$ control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c shall measure $SO_2$ concentrations and either oxygen or carbon dioxide concentrations at both the inlet and outlet of the $SO_2$ control device.

(b) The 1-hour average $SO_2$ emission rates measured by a CEM shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average $SO_2$ emission rate must be based on at least 30 minutes of operation and include at least 2 data points representing two 15-minute periods. Hourly $SO_2$ emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (Appendix B).

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (Appendix F).

(3) For affected facilities subject to the percent reduction requirements under § 60.42c, the span value of the $SO_2$ CEMS at the inlet to the $SO_2$ control device shall be 125 percent of the maximum estimated hourly potential $SO_2$ emission rate of the fuel combusted, and the span value of the $SO_2$ CEMS at the outlet from the $SO_2$ control device shall be 50 percent of the maximum estimated hourly potential $SO_2$ emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of § 60.42c, the span value of the $SO_2$ CEMS at the outlet from the $SO_2$ control device (or outlet of the steam generating unit if no $SO_2$ control device is used) shall be 125 percent of the maximum estimated hourly potential $SO_2$ emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the $SO_2$ control device (or outlet of the steam generating unit if no $SO_2$ control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average $SO_2$ emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEM at the outlet from the $SO_2$ control device (or outlet of the steam generating unit if no $SO_2$ control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average $SO_2$ emission rate by using Method 6B. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average $SO_2$ input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fule tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B may be used in lieu of CEMS to measure $SO_2$ at the inlet or outlet of the $SO_2$ control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test shall consist of three paired runs of a suitable $SO_2$ and carbon dioxide

measurement train operated at the candidate location and a second similar train operated according to the procedures in § 3.2 and the applicable procedures in section 7 of Performance Specification 2 (Appendix B). Method 6B, Method 6A, or a combination of Methods 6 and 3 or Methods 6C and 3A are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the $SO_2$ standards based on fuel supplier certification, as described under § 60.48c(f) (1), (2), or (3), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

### § 60.47c Emission monitoring for particulate matter.

(a) The owner or operator of an affected facility combusting coal, residual oil, or wood that is subject to the opacity standards under § 60.43c shall install, calibrate, maintain, and operate a CEMS for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system.

(b) All CEMS for measuring opacity shall be operated in accordance with the applicable procedures under Performance Specification 1 (appendix B). The span value of the opacity CEMS shall be between 60 and 80 percent.

### § 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under § 60.42c, or § 60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling $SO_2$ emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the $SO_2$ emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS using the applicable performance specifications in appendix B.

(c) The owner or operator of each coal-fired, residual oil-fired, or wood-fired affected facility subject to the opacity limits under § 60.43c(c) shall submit excess emission reports for any calendar quarter for which there are excess emissions from the affected facility. If there are no excess emissions during the calendar quarter, the owner or operator shall submit a report semiannually stating that no excess emissioins occurred during the semiannual reporting period. The initial quarterly report shall be postmarked by the 30th day of the third month following the completion of the initial performance test, unless no excess emissions occur during that quarter. The initial semiannual report shall be postmarked by the 30th day of the sixth month following the completion of the initial performance test, or following the date of the previous quarterly report, as applicable. Each subsequent quarterly or semiannual report shall be postmarked by the 30th day following the end of the reporting period.

(d) The owner or operator of each affected facility subject to the $SO_2$ emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit quarterly reports to the Administrator. The initial quarterly report shall be postmarked by the 30th day of the third month following the completion of the initial performance test. Each subsequenty quarterly report shall be postmarked by the 30th day following the end of the reporting period.

(e) The owner or operator of each affected facility subject to the $SO_2$ emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.43c shall keep records and submit quarterly reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average $SO_2$ emission rate (ng/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential $SO_2$ emission rate calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(4) Identification of any steam generating unit operating days for which $SO_2$ or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the quarterly report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted

represent all of the fuel combusted during the quarter.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier; and

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

(h) The owner or operator of each affected facility subject to a Federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under § 60.42c or § 60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(Approved by the Office of Management and Budget under control number 2060-0202)

## Subpart E—Standards of Performance for Incinerators

### § 60.50 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each incinerator of more than 45 metric tons per day charging rate (50 tons/day), which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977]

### § 60.51 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Incinerator* means any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter.

(b) *Solid waste* means refuse, more than 50 percent of which is municipal type waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustibles, and noncombustible materials such as glass and rock.

(c) *Day* means 24 hours.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 20792, June 14, 1974]

### § 60.52 Standard for particulate matter.

(a) On and after the date on which the performance test required to be

## Subpart CCC [Reserved]

## Subpart DDD—Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry

SOURCE: 55 FR 51035, Dec. 11, 1990, unless otherwise noted.

### § 60.560 Applicability and designation of affected facilities.

(a) *Affected facilities.* The provisions of this subpart apply to affected facilities involved in the manufacture of polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in § 60.561 of this subpart. The affected facilities designated below for polypropylene and polyethylene are inclusive of all equipment used in the manufacture of these polymers, beginning with raw materials preparation and ending with product storage, and cover all emissions emanating from such equipment.

(1) For process emissions from any polypropylene and polyethylene manufacturing process that uses a continuous process, the affected facilities are each of the following process sections: each raw materials preparation section, each polymerization reaction section, each material recovery section, each product finishing section, and each product storage section. These process sections are affected facilities for process emissions that are emitted continuously and for process emissions that are emitted intermittently.

(2) For process emissions from polystyrene manufacturing processes that use a continuous process, the affected facilities are each material recovery section. These process sections are affected facilities for only those process emissions that are emitted continuously.

(3) For process emissions from poly(ethylene terephthalate) manufacturing processes that use a continuous process, the affected facilities are each polymerization reaction section. If the process uses dimethyl terephthalate, then each material recovery section is also an affected facility. If the process uses terephthalic acid, then each raw materials preparation section is also an affected facility. These process sections are affected facilities for only those process emissions that are emitted continuously.

(4) For VOC emissions from equipment leaks from polypropylene, polyethylene, and polystyrene (including expandable polystyrene) manufacturing processes, the affected facilities are each group of fugitive emissions equipment (as defined in § 60.561) within any process unit (as defined in § 60.561). This subpart does not apply to VOC emissions from equipment leaks from poly(ethylene terephthalate) manufacturing processes.

(i) Affected facilities with a design capacity to produce less than 1,000 Mg/yr shall be exempt from § 60.562-2.

(ii) Addition or replacement of equipment for the purposes of improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under § 60.562-2.

(b) *Applicability dates.* The applicability date identifies when an affected facility becomes subject to a standard. Usually, a standard has a single applicability date. However, some polypropylene and polyethylene affected facilities have a September 30, 1987, applicability date and others have a January 10, 1989, applicability date. The following paragraphs identify the applicability dates for all affected facilities subject to this subpart.

(1) *Polypropylene and polyethylene.* Each process section in a polypropylene or polyethylene production process is a potential affected facility for both continuous and intermittent emissions. The applicability date depends on when the process section was constructed, modified, or reconstructed and, in some instances, on the type of production process.

(i) The applicability date for any polypropylene or polyethylene affected facility that is constructed, modified, or reconstructed after January 10, 1989, regardless of the type of production process being used, is January 10, 1989.

(ii) Only some polypropylene or polyethylene process sections that are constructed, modified, or reconstructed on or before January 10, 1989, but after September 30, 1987, are affected facilities. These process sections (and the type of emissions to be controlled) are identified by an "x" in Table 1. The applicability date for the process sections (and the emissions to be controlled) that are identified by an "x" in Table 1 is September 30, 1987. Since the affected facilities that have a September 30, 1987, applicability date are determined by the type of production process (e.g., liquid phase, gas phase), each owner or operator shall identify the particular production process that applies to his or her particular process.

TABLE 1—POLYPROPYLENE AND POLYETHYLENE AFFECTED FACILITIES WITH SEPTEMBER 30, 1987, APPLICABILITY DATE

| Polymer | Production process | Process section | Emissions | |
|---|---|---|---|---|
| | | | Continuous | Intermittent |
| Polypropylene | Liquid phase | Raw Materials Preparation | X | — |
| | | Material Recovery | X | — |
| | | Polymerization Reaction | X | X |
| | | Product Finishing | X | — |
| | | Product Storage | — | — |
| Polypropylene | Gas Phase | Raw Materials Preparation | — | — |
| | | Polymerization Reaction | — | X |
| | | Material Recovery | X | — |
| | | Product Finishing | — | — |
| | | Product Storage | — | — |
| Low Density Polyethylene | High Pressure | Raw Materials Preparation | — | X |
| | | Polymerization Reaction | — | X |
| | | Material Recovery | — | X |
| | | Product Finishing | — | X |
| | | Product Storage | — | X |
| Low Density Polyethylene | Low Pressure | Raw Materials Preparation | X | X |
| | | Polymerization Reaction | — | X |
| | | Material Recovery | — | — |
| High Density Polyethylene | Gas Phase | Product Finishing | X | — |
| | | Product Storage | — | — |
| High Density Polyethylene | Liquid Phase Slurry | Raw Materials Preparation | — | X |
| | | Polymerization Reaction | — | — |
| | | Material Recovery | X | — |
| | | Product Finishing | X | — |
| | | Product Storage | — | — |
| High Density Polyethylene | Liquid Phase Solution | Raw Materials Preparation | X | X |
| | | Polymerization Reaction | — | X |
| | | Material Recovery | X | X |
| | | Product Finishing | — | — |
| | | Product Storage | — | — |

NOTE: "X" denotes that that process section is an affected facility for continuous or intermittent emissions or both, as shown, which has a September 30, 1987, applicability date.

"—" denotes that that process section is not considered an affected facility for continous or intermittent emissions or both, as shown, if the process section is constructed, modified, or reconstructed after September 30, 1987, and on or before January 10, 1989. These process sections are affected facilities if they are constructed, modified, or reconstructed after January 10, 1989.

(2) *Polystyrene.* The applicability date for each polystyrene affected facility is September 30, 1987.

(3) *Poly(ethylene terephthalate).* The applicability date for each poly(ethylene terephthalate) affected facility is September 30, 1987.

(c) Any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after its applicability date as identified under paragraph (b) of this section is subject to the requirements of this subpart, except as provided in paragraphs (d) through (f) of this section.

(d) Any polypropylene or polyethylene affected facility with a September 30, 1987, applicability date that commenced construction, modification, or reconstruction after September 30, 1987, and on or before January 10, 1989, with an uncontrolled emission rate (as defined in footnote a to Table 2) at or below those identified in Table 2 is not subject to the requirements of § 60.562-1 unless and until its uncontrolled emission rate exceeds that rate listed for it in Table 2 or it is modified or reconstructed after January 10, 1989. At such time, such facility becomes subject to § 60.562-1 and the procedures identified in § 60.562-1(a) shall be used to determine the control of emissions from the facility.

TABLE 2—MAXIMUM UNCONTROLLED THRESHOLD EMISSION RATES[a]

| Production process | Process section | Uncontrolled emission rate, kg TOC/Mg product |
|---|---|---|
| Polypropylene, liquid phase process | Raw Materials Preparation | 0.15[b] |
| | Polymerization Reaction | 0.14[b], 0.24[c] |
| | Material Recovery | 0.19[b] |
| | Product Finishing | 1.57[b] |
| Polypropylene, gas phase process | Polymerization Reaction | 0.12[c] |
| | Material Recovery | 0.02[b] |
| Low Density Polyethylene, low pressure process | Raw Materials Preparation | 0.41[d] |
| | Polymerization Reaction | ([e]) |
| | Material Recovery | ([e]) |
| | Product Finishing | ([e]) |
| | Product Storage | ([e]) |
| Low Density Polyethylene, low pressure process | Raw Materials Preparation | 0.05[f] |
| | Polymerization Reaction | 0.03[g] |
| | Production Finishing | 0.01[b] |
| High Density Polyethylene, liquid phase slurry process | Raw Materials Preparation | 0.25[c] |
| | Material Recovery | 0.11[b] |
| | Product Finishing | 0.41[b] |
| High Density Polyethylene, liquid phase solution process. | Raw Materials Preparation | 0.24[f] |
| | Polymerization Reaction | 0.16[c] |
| | Material Recovery | 1.68[f] |
| High Density Polyethylene, gas phase process | Raw Materials Preparation | 0.05[f] |
| | Polymerization Reaction | 0.03[g] |
| | Product Finishing | 0.01[b] |
| Polystyrene, continuous process | Material Recovery | 0.05[b, h] |
| Poly(ethylene terephthalate), dimethyl terephthalate process. | Material Recovery | 0.12[b, h] |
| | Polymerization Reaction | 1.60[h, i, j] |
| Poly(ethylene terephthalate), terephthalic acid process. | Raw Materials Preparation | ([l]) |
| | Polymerization Reaction | 1.80[h, j, m]<br>3.92[h, k, m] |

[a] "Uncontrolled emission rate" refers to the emission rate of a vent stream that vents directly to the atmosphere and to the emission rate of a vent stream to the atmosphere that would occur in the absence of any add-on control devices but after any material recovery devices that constitute part of the normal material recovery operations in a process line where potential emissions are recovered for recycle or resale.

[b] Emission rate applies to continuous emissions only.

[c] Emission rate applies to intermittent emissions only.

[d] Total emission rate for non-emergency intermittent emissions from raw materials preparation, polymerization reaction, material recovery, product finishing, and product storage process sections.

[e] See footnote d.

[f] Emission rate applies to both continuous and intermittent emissions.

[g] Emission rate applies to non-emergency intermittent emissions only.

[h] Applies to modified or reconstructed affected facilities only.

[i] Includes emissions from the cooling water tower.

[j] Applies to a process line producing low viscosity poly(ethylene terephthalate)

[k] Applies to a process line producing high viscosity poly(ethylene terephathalate).

[l] See footnote m.

[m] Applies to the sum of emissions to the atmosphere from the polymerization reaction section (including emissions from the cooling water tower) and the raw materials preparation section (i.e., the esterifiers).

(e)(1) Modified or reconstructed affected facilities at polystyrene and poly(ethylene terephthalate) plants with uncontrolled emission rates at or below those identified in Table 2 are exempt from the requirements of § 60.562-1 unless and until its uncontrolled emission rate exceeds that rate listed for it in Table 2. This exemption does not apply to new polystyrene or poly(ethylene terephthalate) affected facilities.

(2) Emissions from modified or reconstructed affected facilities that are controlled by an existing control device and that have uncontrolled emission rates greater than the uncontrolled threshold emission rates identified in Table 2 are exempt from the requirements of § 60.562-1 unless and until the *existing control device* is modified, reconstructed, or replaced.

(f) No process section of an experimental process line is considered an affected facility for continuous or intermittent process emissions.

(g) Individual vent streams that emit continuous emissions with uncontrolled annual emissions of less than 1.6 Mg/yr or with a weight percent TOC of less than 0.10 percent from a new, modified, or reconstructed polypropylene or polyethylene affected facility are exempt from the requirements of § 60.562-1(a)(1). If at a later date, an individual stream's uncontrolled annual emissions become 1.6 Mg/yr or greater (if the stream was exempted on the basis of the uncontrolled annual emissions exemption) or VOC concentration becomes 0.10 weight percent or higher (if the stream was exempted on the basis of the VOC concentration exemption), then the stream is subject to the requirements of § 60.562-1.

(h) Emergency vent streams, as defined in § 60.561, from a new, modified, or reconstructed polypropylene or polyethylene *affected facility are exempt* from the requirements of § 60.562-1(a)(2).

(i) An owner or operator of a polypropylene or polyethylene affected facility that commenced construction, modification, or reconstruction after September 30, 1987, and on or before January 10, 1989, and that is in a process line in which more than one type of polyolefin (i.e., polypropylene, low density polyethylene, high density polyethylene, or their copolymers) is produced shall select one of the polymer/production process combinations in Table 1 for purposes of determining applicable affected facilities and uncontrolled threshold emissions rates.

(NOTE: The numerical emission limits in these standards are expressed in terms of total organic compounds, measured as total organic compounds less methane and ethane.)

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991]

### § 60.561 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A of part 60, or in subpart VV of part 60, and the following terms shall have the specific meanings given them.

*Boiler* means any enclosed combustion device that extracts useful energy in the form of steam.

*Capital expenditure* means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(a) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, as reflected by the following equation: $A = Y \times (B \div 100)$;

(b) The percent Y is determined from the following equation: $Y = 1.0 - 0.57 \log X$, where X is 1986 minus the year of construction; and

(c) The applicable basic annual asset guideline repair allowance, B, is equal to 12.5.

*Car-sealed* means, for purposes of these standards, a seal that is placed on the device used to change the position of a valve (e.g., from opened to closed) such that the position of the valve cannot be changed without breaking the seal and requiring the replacement of the old seal once broken with a new seal.

*Closed vent system* means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

*Continuous emissions* means any gas stream containing VOC that is generated essentially continuously when the process line or any piece of equipment in the process line is operating.

*Continuous process* means a polymerization process in which reactants are introduced in a continuous manne and products are removed either continuously or intermittently at regular intervals so that the process can be operated and polymers produced essentially continuously.

*Control device* means an enclosed combustion device, vapor recovery system, or flare.

*Copolymer* means a polymer that has two different repeat units in its chain.

*Decomposition* means, for the purposes of these standards, an event in a polymerization reactor that advances to the point where the polymerization reaction becomes uncontrollable, the polymer begins to break down (decompose), and it becomes necessary to relieve the reactor instantaneously in order to avoid catastrophic equipment damage or serious adverse personnel safety consequences.

*Decomposition emissions* refers to those emissions released from a polymer production process as the result of a decomposition or during attempts to prevent a decomposition.

*Emergency vent stream* means, for the purposes of these standards, an intermittent emission that results from a decomposition, attempts to prevent decompositions, power failure, equipment failure, or other unexpected cause that requires immediate venting of gases from process equipment in order to avoid safety hazards or equipment damage. This includes intermittent vents that occur from process equipment where normal operating parameters (e.g., pressure or temperature) are exceeded such that the process equipment can not be returned to normal operating conditions using the design features of the system and venting must occur to avoid equipment failure or adverse safety personnel consequences and to minimize adverse effects of the runaway reaction. This does not include intermittent vents that are designed into the process to maintain normal operating conditions of process vessels including those vents that regulate normal process vessel pressure.

*End finisher* means a polymerization reaction vessel operated under very low pressures, typically at pressures of 2 torr or less, in order to produce high viscosity poly(ethylene terephthalate). An end finisher is preceded in a high viscosity poly(ethylene terephthalate) process line by one or more polymerization vessels operated under less severe vacuums, typically between 5 and 10 torr. A high viscosity poly(ethylene terephthalate) process line may have one or more end finishers.

*Existing control device* means, for the purposes of these standards, an air pollution control device that has been in operation on or before September 30, 1987, or that has been in operation between September 30, 1987, and January 10, 1989, on those continuous or intermittent emissions from a process section that is marked by an "—" in Table 1 of this subpart.

*Existing control device is reconstructed* means, for the purposes of these standards, the capital expenditure of at least 50 percent of the replacement cost of the existing control device.

*Existing control device is replaced* means, for the purposes of these standards, the replacement of an existing control device with another control device.

*Expandable polystyrene* means a polystyrene bead to which a blowing agent has been added using either an in-situ suspension process or a post-impregnation suspension process.

*Experimental process line* means a polymer or copolymer manufacturing process line with the sole purpose of operating to evaluate polymer manufacturing processes, technologies, or products. An experimental process line does not produce a polymer or resin that is sold or that is used as a raw material for nonexperimental process lines.

*Flame zone* means that portion of the combustion chamber in a boiler occupied by the flame envelope.

*Fugitive emissions 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 and any devices or systems required by subpart VV of this part.

*Gas phase process* means a polymerization process in which the polymerization reaction is carried out in the gas phase; i.e., the monomer(s) are

gases in a fluidized bed of catalyst particles and granular polymer.

*High density polyethylene (HDPE)* means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight and having a density of greater than 0.940 g/cm³.

*High pressure process* means the conventional production process for the manufacture of low density polyethylene in which a reaction pressure of about 15,000 psig or greater is used.

*High viscosity poly(ethylene terephthalate)* means poly(ethylene terephthalate) that has an intrinsic viscosity of 0.9 or higher and is used in such applications as tire cord and seat belts.

*Incinerator* means an enclosed combustion device that is used for destroying VOC.

*In-situ suspension process* means a manufacturing process in which styrene, blowing agent, and other raw materials are added together within a reactor for the production of expandable polystyrene.

*Intermittent emissions* means those gas streams containing VOC that are generated at intervals during process line operation and includes both planned and emergency releases.

*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.

*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.

*Liquid phase solution process* means a liquid phase polymerization process in which both the monomer(s) and polymer are in solution (completely dissolved) in the liquid reaction mixture.

*Low density polyethylene (LDPE)* means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight and having a density of 0.940 g/cm³ or less.

*Low pressure process* means a pr duction process for the manufactur of low density polyethylene in which reaction pressure markedly below tha used in a high pressure process is use Reaction pressure of current low pre sure processes typically go up to abou 300 psig.

*Low viscosity poly(ethylene terephthalate)* means a poly(ethylene terephthalate) that has an intrinsic vis cosity of less than 0.75 and is used i such applications as clothing, bottle and film production.

*Material recovery section* means th equipment that recovers unreacted o by-product materials from any proces section for return to the process line off-site purification or treatment, o sale. Equipment designed to separat unreacted or by-product material fron the polymer product are to be included in this process section, provided a least some of the material is recovere for reuse in the process, off-site purification or treatment, or sale, at th time the process section becomes a affected facility. Otherwise suc equipment are to be assigned to one o the other process sections, as appropriate. Equipment that treats recovered materials are to be included i this process section, but equipmen that also treats raw materials are no to be included in this process section The latter equipment are to be included in the raw materials preparatio section. If equipment is used to retur unreacted or by-product material directly to the same piece of proces equipment from which it was emitted then that equipment is considere part of the process section that contains the process equipment. If equipment is used to recover unreacted o by-product material from a proces section and return it to another process section or a different piece of process equipment in the same process section or sends it off-site for purification, treatment, or sale, then such equipment are considered part of a material recovery section. Equipment used for the on-site recovery of ethylene glycol from poly(ethylene terephthalate) plants, however, are not included in the material recovery section, but are covered under the standards applicable to the polymerization reaction section (§ 60.562-1(c)(1)(ii)(A) or (2)(ii)(A)).

*Operating day* means, for the purposes of these standards, any calendar day during which equipment used in the manufacture of polymer was operating for at least 8 hours or one labor shift, whichever is shorter. Only operating days shall be used in determining compliance with the standards specified in § 60.562-1(c)(1)(ii)(B), (1)(ii)(C), (2)(ii)(B), and (2)(ii)(C). Any calendar day in which equipment is used for less than 8 hours or one labor shift, whichever is less, is not an "operating day" and shall not be used as part of the rolling 14-day period for determining compliance with the standards specified in § 60.562-1(c)(1)(ii)(B), (1)(ii)(C), (2)(ii)(B), and (2)(ii)(C).

*Polyethylene* means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight; see low density polyethylene and high density polyethylene.

*Poly(ethylene terephthalate)* (*PET*) means a polymer or copolymer comprised of at least 50 percent bis-(2-hydroxyethyl)-terephthalate (BHET) by weight.

*Poly(ethylene terephthalate)* (*PET*) *manufacture using dimethyl terephthalate* means the manufacturing of poly(ethylene terephthalate) based on the esterification of dimethyl terephthalate (DMT) with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate (BHET) that is subsequently polymerized to form PET.

*Poly(ethylene terephthalate)* (*PET*) *manufacture using terephthalic acid* means the manufacturing of poly(ethylene terephthalate) based on the esterification reaction of terephthalic acid (TPA) with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate (BHET) that is subsequently polymerized to form PET.

*Polymerization reaction section* means the equipment designed to cause monomer(s) to react to form polymers, including equipment designed primarily to cause the formation of short polymer chains (oligomers or low polymers), but not including equipment designed to prepare raw materials for polymerization, e.g., esterification vessels. For the purposes of these standards, the polymerization reaction section begins with the equipment used to transfer the materials from the raw materials preparation section and ends with the last vessel in which polymerization occurs. Equipment used for the on-site recovery of ethylene glycol from poly(ethylene terephthalate) plants, however, are included in this process section, rather than in the material recovery process section.

*Polypropylene* (*PP*) means a thermoplastic polymer or copolymer comprised of at least 50 percent propylene by weight.

*Polystyrene* (*PS*) means a thermoplastic polymer or copolymer comprised of at least 80 percent styrene or para-methylstyrene by weight.

*Post-impregnation suspension process* means a manufacturing process in which polystyrene beads are first formed in a suspension process, washed, dried, or otherwise finished and then added with a blowing agent to another reactor in which the beads and blowing agent are reacted to produce expandable polystyrene.

*Process heater* means a device that transfers heat liberated by burning fuel to fluids contained in tubular coils, including all fluids except water that is heated to produce steam.

*Process line* means a group of equipment assembled that can operate independently if supplied with sufficient raw materials to produce polypropylene, polyethylene, polystyrene, (general purpose, crystal, or expandable) or poly(ethylene terephthalate) or one of their copolymers. 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.

*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.

*Process unit* means equipment assembled to perform any of the physical and chemical operations in the production of polypropylene, polyethylene, polystyrene, (general purpose, crystal, or expandable), or poly(ethylene terephthalate) or one of their copolymers. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. Examples of process units are raw materials handling and monomer recovery.

*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, including equipment that prepares the product for product finishing. For the purposes of these standards, the product finishing section begins with the equipment used to transfer the polymerized product from the polymerization reaction section and ends with the last piece of equipment that modifies the characteristics of the polymer. Product finishing equipment may accomplish product separation, extruding and pelletizing, cooling and drying, blending, additives introduction, curing, or annealing. Equipment used to separate unreacted or by-product material from the product are to be included in this process section, provided the material separated from the polymer product is not recovered at the time the process section becomes an affected facility. If the material is being recovered, then the separation equipment are to be included in the material recovery section. Product finishing does not include polymerization, the physical mixing of the pellets to obtain a homogenous mixture of the polymer (except as noted below), or the shaping (such as fiber spinning, molding, or fabricating) or modification (such as fiber stretching and crimping) of the finished end product. If physical mixing occurs in equipment located between product finishing equipment (i.e., before all the chemical and physical characteristics have been "set" by virtue of having passed through the last piece of equipment in the product finishing section), then such equipment are to be included in this process section. Equipment used to physically mix the finished product that are located after the last piece of equipment in the product finishing section are part of the product storage section.

*Product storage section* means the equipment that is designed to store the finished polymer or resin end product of the particular facility. For the purposes of these standards, the product storage section begins with the equipment used to transfer the finished product out of the product finishing section and ends with the containers used to store the final product. Any equipment used after the product finishing section to recover unreacted or by-product material are to be considered part of a material recovery section. Product storage does not include any intentional modification of the characteristics of any polymer or resin product, but does include equipment that provide a uniform mixture of product, provided such equipment are used after the last product finishing piece of equipment. This process section also does not include the shipment of a finished polymer or resin product to another facility for further finishing or fabrication.

*Raw materials preparation section* means the equipment located at a polymer manufacturing plant designed to prepare raw materials, such as monomers and solvents, for polymerization. For the purposes of these standards, this process section begins with the equipment used to transfer raw materials from storage and recovered material from material recovery process sections, and ends with the last piece of equipment that prepares the material for polymerization. The raw materials preparation section may include equipment that accomplishes purification, drying, or other treatment of raw materials or of raw and recovered materials together, activation of catalysts, and esterification including the formation of some short polymer chains (oligomers), but does not include equipment that is designed primarily to accomplish the formation of oligomers, the treatment of recovered materials alone, or the storage of raw materials.

*Recovery system* means an individual unit or series of material recovery units, such as absorbers, condensers, and carbon adsorbers, used for recovering volatile organic compounds.

*Total organic compounds (TOC)* means those compounds measured according to the procedures specified in § 60.564.

*Vent stream* means any gas stream released to the atmosphere directly from an emission source or indirectly either through another piece of process equipment or a material recovery device that constitutes part of the normal recovery operations in a polymer process line where potential emissions are recovered for recycle or resale, and any gas stream directed to an air pollution control device. The emissions released from an air pollution control device are not considered a vent stream unless, as noted above, the control device is part of the normal material recovery operations in a polymer process line where potential emissions are recovered for recycle or resale.

*Volatile organic compounds (VOC)* means, for the purposes of these standards, any reactive organic compounds as defined in § 60.2 Definitions.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991; 56 FR 12299, Mar. 22, 1991]

### § 60.562–1 *Standards: Process emissions.*

(a) Polypropylene, low density polyethylene, and high density polyethylene. Each owner or operator of a polypropylene, low density polyethylene, or high density polyethylene process line containing a process section subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup whichever comes first.

(1) *Continuous emissions.* For each vent stream that emits continuous emissions from an affected facility as defined in § 60.560(a)(1), the owner or operator shall use the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section for determining which continuous emissions are to be controlled and which level of control listed in paragraph (a)(1)(i) of this section is to be met. The owner or operator shall use the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section each time a process section is constructed, modified, or reconstructed at the plant site.

(i) *Level of control.* Continuous emission streams determined to be subject to control pursuant to the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section, as applicable, shall meet one of the control levels identified in paragraphs (a)(1)(i) (A) through (D) of this section. The procedures in paragraphs (a)(1) (ii) and (iii) of this section identify which level of control may be met. The level of control identified in paragraph (a)(1)(i)(D) of this section is limited to certain continuous emission streams, which are identified through the procedures in paragraphs (a)(1) (ii) and (iii) of this section.

(A) Reduce emissions of total organic compounds (minus methane and ethane) (TOC) by 98 weight percent, or to a concentration of 20 parts per million by volume (ppmv) on a dry basis, whichever is less stringent. The TOC is expressed as the sum of the actual compounds, not carbon equivalents. If an owner or operator elects to comply with the 20 ppmv standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the vent stream.

(B) Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater by introducing the vent stream into the flame zone of the boiler or process heater. (Note: A boiler or process heater of lesser design heat capacity may be used, but must demonstrate compliance with paragraph (a)(1)(i)(A) of this section.)

(C) Combust the emissions in a flare that meets the conditions specified in § 60.18. If the flare is used to control both continuous and intermittent emissions, the flare shall meet the conditions specified in § 60.18 at all times (i.e., which controlling continuous emissions alone or when controlling both continuous and intermittent emissions).

(D) Vent the emissions to a control device located on the plant site.

(ii) *Uncontrolled Continuous Emissions.* For each vent stream that emits continuous emissions from an affected facility as defined in § 60.560(a)(1) and that is not controlled in an existing control device, the owner or operator shall use the procedures identified in Table 3 to identify those continuous emissions from each constructed, modified, or reconstructed affected facility that are to be controlled. The owner shall include in the procedure all *uncontrolled continuous vent* streams from previously constructed, modified, or reconstructed affected f cilities at the plant site each time process section is constructed, mod fied, or reconstructed at the plant sit In applying the procedures shown i Table 3, the stream characteristic may be either measured or calculate as specified in § 60.564(d). For mod fied or reconstructed affected facil ties, these stream characteristics ar *to be determined after a modificatio* or reconstruction determination ha been made by the Administrator, bu before any actual changes have bee undertaken, and then again after th actual changes have been mad Figure 1 provides a summary overvie *of the control determination proc* dure described in Table 3.

TABLE 3—PROCEDURE FOR DETERMINING CONTROL AND APPLICABLE STANDARD FOR CONTINUOU EMISSION STREAMS FROM NEW, MODIFIED, OR RECONSTRUCTED POLYPROPYLENE AND POL ETHYLENE AFFECTED FACILITIES

| *Procedure /a/* | Applicable TOC weight percent range | Control/no control criteria | *Applicable standard* |
|---|---|---|---|
| 1. Sum all uncontrolled streams with TOC weight percent within the applicable weight percent range from all affected facilities at a plant site. | 0.10<5.5 | 1. If total combined uncontrolled emissions are equal to or greater than the calculated threshold emissions (CTE) /b/, control. | 1. § 60.562–1(a)(1)(i) (A), (B), or (C |
| 2. Calculate total uncontrolled annual emissions for each weight percent range. For modified or affected facilities, use the total uncontrolled emissions after modification or reconstruction. | | 2. If total combined uncontrolled emission are less than the CTE /b/, control only individual streams with volume flow rates of 8 scfm or less. | 2. § 60.562–1(a)(1)(i) (A) throu (D). |
| 3. Calculate composite TOC concentration (weight percent) for streams in the 0.10 to less than 5.5 weight percent range and for streams in the 5.5 to less than 20 weight percent range. For modified or reconstructed affected facilities, calculate the composite VOC concentration before and after modification and reconstruction. | 5.5<20 | 1. If total combined uncontrolled emissions are equal to or greater than CTE /b/, control.. | 1. § 60.562–1(a)(1)(i) (A), (B), or (<br>2. If total combined uncontroll emissions are less than the CTE b/, control only individual strea with volume flow rates of 8 sc or less. |
| 4. Select the higher of the two TOC concentrations for each weight percent range for vent streams from a modified or reconstructed affected facility. | 20 to 100 | 1. If total combined uncontrolled emissions are equal to or greater than 18.2 Mg/yr, control. | 1. § 60.562–1(a)(1)(i) (A), (B), or (C |
| 5. Calculate the threshold emissions for the 0.10 to less than 5.5 weight percent range and for the 5.5 to less than 20 weight percent range using the respective composite TOC concentration selected above. | | 2. If total combined uncontrolled emissions are less than 18.2 Mg/yr, control. | 2. § 60.562–1(a)(1)(i) (A) throu (D). |

a Individual streams excluded under § 60.560(g) from the requirements of § 60.562–1 are to be excluded from all calculatio in this table. This paragraph exempts all individual emission streams with individual uncontrolled annual emission rates of le than 1.6 Mg/yr and all individual emission streams with individual TOC concentrations of less than 0.10 percent TOC weight.

b For the 0.10 to less than 5.5 weight percent range, the following equations are used:

| If the percent composite TOC concentration is | Use this equation to calculate threshold emissions |
|---|---|
| 0.10<0.12 | $(a \times 7.5 \times 10^5)+226$ |
| 0.12<0.2 | $(b \times 58.3)+116.8$ |
| 0.2<0.3 | $(c \times 3020)+71.8$ |
| 0.3<0.4 | $(d \times 547)+54.5$ |
| 0.4<0.6 | 48.3+31 (0.6−weight percent TOC) |
| 0.6<5.5 | 48.3 |

where: $a=(0.12-\text{weight percent TOC})^{2.5}$

$$b=\frac{\left[\frac{0.18}{\text{weight percent TOC}}\right]^{0.5}-1}{\text{weight percent TOC}}$$

$c=(0.3-\text{weight percent TOC})^{2}$

$d=(0.4-\text{weight percent TOC})^{1.5}$

For the 5.5 to less than 20 weight percent range, the following equations are used.

| If the percent composite TOC concentration is | Use this equation to calculate threshold emissions |
|---|---|
| 5.5<7.0 | $(e \times 740)+31$ |
| 7.0<9.0 | $(f \times 324)+25.0$ |
| 9.0<20 | $(g \times 125)+16.2$ |

where:

$$e=\frac{\left[\frac{7.0}{\text{weight percent TOC}}\right]^{0.5}-1}{\text{weight percent TOC}}$$

$$f=\frac{\left[\frac{9.0}{\text{weight percent TOC}}\right]^{0.5}-1}{\text{weight percent TOC}}$$

$$g=\frac{\left[\frac{20.0}{\text{weight percent TOC}}\right]^{0.5}-1}{\text{weight percent TOC}}$$

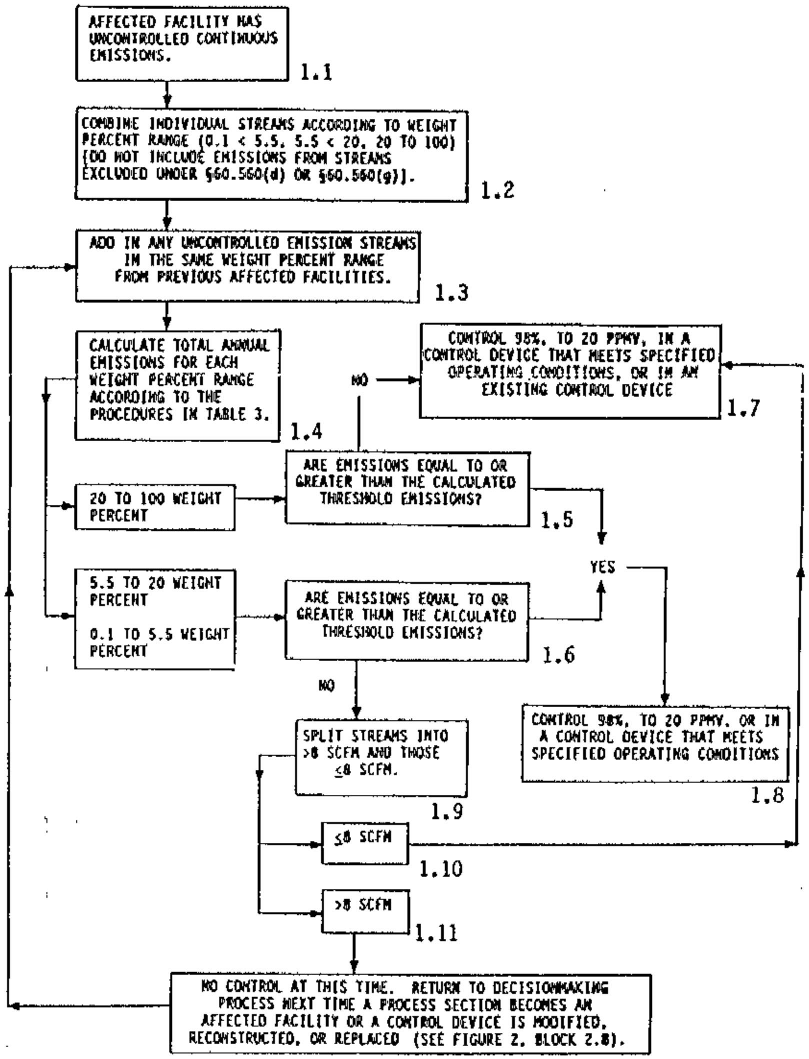
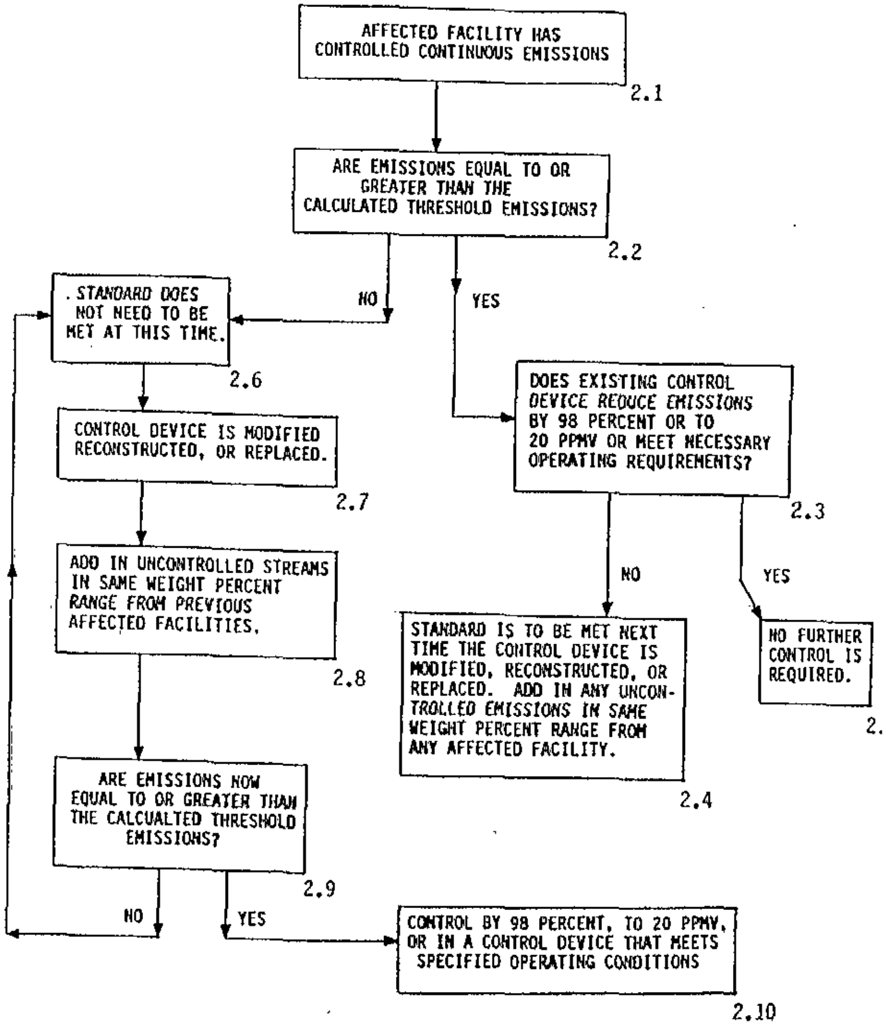


Figure 1. Decisionmaking Process for Uncontrolled Continuous Emission from Polypropylene and Polyethylene Affected Facilities

(iii) Controlled Continuous Emissions. For each vent stream that emits continuous emissions from an affected facility as defined in § 60.560(a)(1) and that is controlled in an existing control device, each owner or operator shall determine whether the emissions entering the control device are greater than or equal to the calculated threshold emissions (CTE) level, which is to be calculated using the TOC concentration of the inlet vent stream and the equations in footnote b of Table 3. If the inlet stream's TOC concentration is equal to or greater than 20 weight percent, the calculated threshold emissions level is 18.2 Mg/yr. If multiple emission streams are vented to the control device, the individual streams are not to be separated into individual weight percent ranges for calculation purposes as would be done for uncontrolled emission streams. Emissions vented to an existing control device are required to be controlled as described in paragraphs (a)(1)(iii) (A) and (B) of this section. Figure 2 illustrates the control determination procedure for controlled continuous emissions.



NOTE: There are no individual stream exemptions for emissions already controlled by existing control devices.

Figure 2. Decisionmaking Process for Continuous Emissions Already Controlled at Polypropylene and Polyethylene Affected Facilities

(A) If the annual emissions of the stream entering the control device are equal to or greater than the CTE levels, then compliance with one of the requirements identified in § 60.562-1(a)(1)(i) (A), (B), or (C) is required at such time the control device is reconstructed or replaced or has its operating conditions modified as a result of State or local regulations (including changes in the operating permit) including those instances where the control device is reconstructed, replaced, or modified in its operation at the same time the existing process section is modified or reconstructed and becomes an affected facility. If the existing control device already complies with one of the requirements identified in § 60.562-1(a)(1)(i) (A), (B), or (C), no further control is required.

(B) If the annual emissions of the stream entering the control device are less than the CTE level, then the requirements of § 60.562-1(a)(1)(i) (A), (B), or (C) are not applicable at that time. However, if the control device is replaced, reconstructed, or modified at a later date, each owner or operator shall reevaluate the applicability of these standards. This is done by combining with the vent stream entering the control device any uncontrolled vent streams in the same weight percent range as the controlled vent stream and determining whether the annual emissions of the stream entering the control device plus the applicable uncontrolled vent streams are greater than or equal to the CTE level, which is based on the weighted TOC concentration of the controlled vent stream and the uncontrolled vent streams. If the annual emissions entering the control device (including the applicable uncontrolled vent streams) are greater than or equal to the CTE level, then compliance with one of the requirements identified in § 60.562-1(a)(1)(i) (A), (B), or (C) is required at that time for both the controlled and uncontrolled vent streams. If the annual emissions are less than the CTE level, compliance with these standards is again not required at such time. However, if the control device is again replaced, reconstructed, or modified, each owner or operator shall repeat this determination procedure.

(2) *Intermittent emissions.* The owner or operator shall control each vent stream that emits intermittent emissions from an affected facility as defined in § 60.560-1(a)(1) by meeting one of the control requirements specified in paragraphs (a)(2) (i) and (ii) of this section. If a vent stream that emits intermittent emissions is controlled in an existing flare, incinerator, boiler,or process heater, the requirements of this paragraph are waived until such time the control device is reconstructed or replaced or is modified in its operating conditions as a result of State or local regulation, including changes in the operating permit. This paragraph does not apply to emergency vent streams exempted by § 60.560(h) and as defined in § 60.561.

(i) Combust the emissions in a flare that is:

(A) Designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours,

(B) Operated with a flame present at all times, and

(C) Designed to maintain a stable flame.

(ii) Combust the emissions in an incinerator, boiler, or process heater. Such emissions shall be introduced into the flame zone of a boiler or process heater.

(b) *Polystyrene.* Each owner or operator of a polystyrene process line containing process sections subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first. Each owner or operator of a polystyrene process line using a continuous process shall:

(1) Limit the continuous TOC emissions from the material recovery section by complying with one of the following:

(i) Not allow continuous TOC emissions to be greater than 0.0036 kg TOC/Mg product; or

(ii) Not allow the outlet gas stream temperature from each final condenser in the material recovery section to exceed −25 °C (−13 °F). For purposes of this standard, temperature excursions above this limit shall not be considered a violation when such excursions occur during periods of startup, shutdown, or malfunction; or

(iii) Comply with § 60.562-1(a)(1)(i) (A), (B), or (C).

(2) If continuous TOC emissions from the material recovery section are routed through an existing emergency vapor recovery system, then compliance with these standards is required when the emergency vapor recovery system undergoes modification, reconstruction, or replacement. In such instances, compliance with these standards shall be achieved no later than 180 days after completion of the modification, reconstruction, or replacement.

(c) *Poly(ethylene terephthalate).* Each owner or operator of a poly(ethylene terephthalate) process line containing process sections subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first.

(1) Each owner or operator of a PET process line using a dimethyl terephthalate process shall:

(i) Limit the continuous TOC emissions from the material recovery section (i.e., methanol recovery) by complying with one of the following:

(A) Not allow the continuous TOC emissions to be greater than 0.018 kg TOC/Mg product; or

(B) Not allow the outlet gas stream temperature from each final condenser in the material recovery section (i.e., methanol recovery) to exceed +3 °C (+37 °F). For purposes of this standard, temperature excursions above this limit shall not be considered a violation when such excursions occur during periods of startup, shutdown, or malfunction.

(ii) Limit the continuous TOC emissions and, if steam-jet ejectors are used to provide vacuum to the polymerization reactors, the ethylene glycol concentration from the polymerization reaction section by complying with the appropriate standard set forth below. The ethylene glycol concentration limits specified in paragraphs (c)(1)(ii) (B) and (C) of this section shall be determined by the procedures specified in § 60.564(j).

(A) Not allow continuous TOC emissions from the polymerization reaction section (including emissions from any equipment used to further recover the ethylene glycol, but excluding those emissions from the cooling tower) to be greater than 0.02 kg TOC/Mg product; and

(B) If steam-jet ejectors are used as vacuum producers and a low viscosity product is being produced using single or multiple end finishers or a high viscosity product is being produced using a single end finisher, maintain the concentration of ethylene glycol in the liquid effluent exiting the vacuum system servicing the polymerization reaction section at or below 0.35 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days; or

(C) If steam-jet ejectors are used as vacuum producers and a high viscosity product is being produced using multiple end finishers, maintain an ethylene glycol concentration in the cooling tower at or below 6.0 percent by weight averaged on a daily basis over a rolling 14-day period of operating days.

(2) Each owner or operator of a PET process line using a terephthalic acid process shall:

(i) Not allow the continuous TOC emissions from the esterification vessels in the raw materials preparation section to be greater than 0.04 kg TOC/Mg product.

(ii) Limit the continuous TOC emissions and, if steam-jet ejectors are used to provide vacuum to the polymerization reactors, the ethylene glycol concentration from the polymerization reaction section by complying with the appropriate standard set forth below.

The *ethylene glycol concentration* limits specified in paragraphs (c)(2)(ii)(B) and (C) of this section shall be determined by the procedures specified in § 60.564(j).

(A) Not allow continuous TOC emissions from the polymerization reaction section (including emissions from any equipment used to further recover the ethylene glycol, but excluding those emissions from the cooling tower) to be greater than 0.02 kg TOC/Mg product; and

(B) If steam-jet ejectors are used as vacuum producers and a low viscosity product is being produced using single or multiple end finishers or a high viscosity product is being produced using a single end finisher, maintain the concentration of ethylene glycol in the liquid effluent exiting the vacuum system servicing the polymerization reaction section at or below 0.35 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days; or

(C) If steam-jet ejectors are used as vacuum producers and a high viscosity product is being produced using multiple end finishers, maintain an ethylene glycol concentration in the cooling tower at or below 6.0 percent by weight averaged on a daily basis over a rolling 14-day period of operating days.

(d) Closed vent systems and control devices used to comply with this subpart shall be operated at all times when emissions may be vented to them.

(e) Vent systems that contain valves that could divert a vent stream from a control device shall have car-sealed opened all valves in the vent system from the emission source to the control device and car-sealed closed all valves in vent system that would lead *the vent stream* to the atmosphere, either directly or indirectly, bypassing the control device.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991]

### § 60.562–2 Standards: Equipment leaks of VOC.

(a) Each owner or operator of an affected facility subject to the provisions of this subpart shall comply with the *requirements specified* in § 60.482–1 through § 60.482–10 as soon as practicable, but no later than 180 days after initial startup, except that indications of liquids dripping from bleed ports in existing pumps in light liquid service are *not considered to be a leak as* defined in § 60.482–2(b)(2). For purposes of this standard, a "bleed port" is a technologically-required feature of the pump whereby polymer fluid used to provide lubrication and/or cooling of the pump shaft exits the pump, thereby resulting in a visible leak of fluid. This exemption expires when the existing pump is replaced or reconstructed.

(b) An owner or operator may elect to comply with the requirements specified in § 60.483–1 and § 60.483–2.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements specified in § 60.484.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions specified in § 60.485 except an owner or operator *may use the following provision in addition to* § 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C as determined by ASTM Method D86–78 (incorporated by reference as specified in § *60.17*).

(e) Each owner or operator subject to the provisions of this subpart shall comply with § 60.486 and § 60.487.

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991]

### § 60.563 Monitoring requirements.

(a) Whenever a particular item of monitoring equipment is specified in this section to be installed, the owner or operator *shall install, calibrate,* maintain, and operate according to manufacturer's specifications that item as follows:

(1) A temperature monitoring device to measure and record continuously the operating temperature to within 1 percent (relative to degrees Celsius) or ± 0.5 °C (± 0.9 °F), whichever is greater.

(2) A flame monitoring device, such as a thermocouple, an ultraviolet sensor, an infrared beam sensor, or similar device to indicate and record continuously whether a flare or pilot light flame is present, as specified.

(3) A flow monitoring indicator to indicate and record whether or not flow exists at least once every fifteen minutes.

(4) An organic monitoring device (based on a detection principle such as infrared, photoionization, or thermal conductivity) to indicate and record continuously the concentration level of organic compounds.

(5) A specific gravity monitoring device to measure and record continuously to within 0.02 specific gravity unit.

(b) The owner or operator shall install, as applicable, the monitoring equipment for the control means used to comply with § 60.562–1, except § 60.562–1(a)(1)(i)(D), as follows:

(1) *If the control equipment is an in*cinerator:

(i) For a noncatalytic incinerator, a temperature monitoring device shall be installed in the firebox.

(ii) For a catalytic incinerator, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalytic bed.

(2) If a flare is used:

(i) A flame monitoring device shall be installed to indicate the presence of a flare flame or a flame for each pilot light, if the flare is used to comply with § 60.562–1(a)(1), including those flares controlling both continuous and intermittent emissions.

(ii) A thermocouple or equivalent monitoring device to indicate the presence of a flame at each pilot light, if used to comply with § 60.562–1(a)(2).

(3) If a boiler or process heater is used:

(i) If the boiler or process heater has a heat input design capacity of less than 150 million Btu/hr, a temperature monitoring device shall be installed between the radiant section and the convection zone for watertube boilers and between the furnace (combustion zone) and the firetubes for firetube boilers.

(ii) If the boiler or process heater has a heat input design capacity of 150 million Btu/hr or greater, such records to indicate the periods of operation of the boiler or process heater shall be maintained. The records must be readily available for inspection.

(4) If an absorber is the final unit in a system:

(i) A temperature *monitoring device* and a specific gravity monitoring device for the scrubber liquid shall be installed, or

(ii) An organic monitoring device shall be installed at the outlet of the *absorber.*

(5) If a condenser is the final unit in a system:

(i) A temperature monitoring device shall be installed at the condenser exit (product side), or

*(ii) An* organic monitoring device shall be installed at the outlet of the condenser.

(6) If a carbon adsorber is the final unit in a system, an organic monitoring device shall be installed at the outlet of the carbon bed.

(c) Owners or operators of control devices used to comply with the provisions of this subpart, except § 60.562–1(a)(1)(i)(D), shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(d) Owners or operators using a vent system that contains valves that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do one or a combination of the following:

(1) Install a flow indicator immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere. The flow indicator shall be capable of recording flow at least once every fifteen minutes.

(2) Monitor the valves once a month, checking the position of *the valves* and the condition of the car seal, and identify all times when the car seals have been broken and the valve position has been changed (i.e., from opened to closed for valves in the vent piping to the *control device and from*

closed to open for valves that allow the stream to be vented directly or indirectly to the atmosphere).

(e) An owner or operator complying with the standards specified under § 60.562-1, except § 60.562-1(a)(1)(i)(D), with control devices other than an incinerator, boiler, process heater, flare, absorber, condenser, or carbon adsorber or by any other means shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991]

### § 60.564 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures specified in this section, except as provided under § 60.8(b). Owners or operators complying with § 60.562-1(a)(1)(i)(D) need not perform a performance test on the control device, provided the control device is not used to comply with any other requirement of § 60.562-1(a).

(1) Whenever changes are made in production capacity, feedstock type or catalyst type, or whenever there is replacement, removal, or addition of a control device, each owner or operator shall conduct a performance test according to the procedures in this section as appropriate, in order to determine compliance with § 60.562-1.

(2) Where a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater is used, the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in § 114 of the Act.

(3) The owner or operator shall determine the average organic concentration for each performance test run using the equipment described in § 60.563(a)(4). The average organic concentration shall be determined from measurements taken at least every 15 minutes during each performance test run. The average of the three runs shall be the base value for the monitoring program.

(4) When an absorber is the final unit in the system, the owner or operator shall determine the average specific gravity for each performance test run using specific gravity monitoring equipment described in § 60.563(a)(5). An average specific gravity shall be determined from measurements taken at least every 15 minutes during each performance test run. The average of the three runs shall be the base value for the monitoring program.

(5) When a condenser is the final unit in the system, the owner or operator shall determine the average outlet temperature for each performance test run using the temperature monitoring equipment described in § 60.563(a)(1). An average temperature shall be determined from measurements taken at least every 15 minutes during each performance test run while the vent stream is normally routed and constituted. The average of the three runs shall be the base value for the monitoring program.

(b) The owner or operator shall determine compliance with the emission concentration standard in § 60.562-1 (a)(1)(i)(A) or (b)(1)(iii) if applicable [if not, see paragraph (c) of this section] as follows:

(1) The TOC concentration is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

$C_{TOC}$ = Concentration of TOC (minus methane and ethane), dry basis, ppmv.

$C_j$ = the concentration of sample component j, ppm.

n = Number of components in the sample.

(i) Method 18 shall be used to determine the concentration of each individual organic component ($C_j$) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site at the outlet of the control device. Method 4 shall be used to determine the moisture content, if necessary.

(ii) 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) If supplemental combustion air is used, the TOC concentration shall be corrected to 3 percent oxygen and shall be computed using the following equation:

$$C_{CORR} = C_{MEAS} \times \left( \frac{17.9}{20.9 - \%O_{2d}} \right)$$

where:

$C_{CORR}$ = Concentration of TOC corrected to 3 percent oxygen, dry basis, ppm by volume.

$C_{MEAS}$ = Concentration of TOC (minus methane and ethane), dry basis, ppm by volume, as calculated in paragraph (b)(1) of this section.

$\%O_{2d}$ = Concentration of $O_2$, dry basis, percent by volume.

The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration ($\%O_{2d}$). The sampling site shall be the same as that of the TOC sample and the samples shall be taken during the same time that the TOC samples are taken.

(c) If paragraph (b) of this section is not applicable, then the owner or operator shall determine compliance with the percent emission reduction standard in § 60.562-1 (a)(1)(i)(A) or (b)(1)(iii) as follows:

(1) The emission reduction of TOC (minus methane and ethane) 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 TOC entering the control device, kg TOC/hr.

$E_{outlet}$ = Mass rate of TOC, discharged to the atmosphere, kg TOC/hr.

(2) The mass rates of TOC ($E_i$, $E_o$) 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/g-mole (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).

$K_1 = 4.157 \times 10^{-8}$ [(kg)/g-mole)]/[(g)(ppm)(dscm)] {$5.711 \times 10^{-15}$ [(lb)/(lb-mole)]/(lb)(ppm)(dscf)]}

(i) Method 18 shall be used to determine the concentration of each individual organic component ($C_{ij}$, $C_{oj}$) in the gas stream. Method 1 or 1A, 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.

(ii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the volumetric flow rates ($Q_i$, $Q_o$). If necessary, Method 4 shall be used to determine the moisture content. Both determinations shall be compatible with the Method 18 determinations.

(iii) 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.

(d) An owner or operator shall determine compliance with the individual stream exemptions in § 60.560(g) and the procedures specified in Table 3 for compliance with § 60.562-1(a)(1) as identified in paragraphs (d)(1) and (2) of this section. An owner or operator using the procedures specified in § 60.562-1(a)(1) for determining which continuous process emissions are to be controlled may use calculations demonstrated to be sufficiently accurate as to preclude the necessity of actual testing for purposes of calculating the uncontrolled annual emissions and weight percent of TOC. Owners or operators seeking to exempt streams under § 60.560(g) must use the appropriate test procedures specified in this section.

(1) The uncontrolled annual emissions of the individual vent stream shall be determined using the following equation:

$$E_{unc} = K_1 \left( \sum_{j=1}^{n} C_j M_j \right) Q \times 8{,}600 \times \frac{1\ \text{Mg}}{1{,}000\ \text{kg}}$$

where:

$E_{unc}$=uncontrolled annual emissions, Mg/yr

$C_j$=concentration of sample component "j" of the gas stream, dry basis, ppmv.

$M_j$=Molecular weight of sample component "j" of the gas stream, g/g-mole (lb/lb-mole).

Q=Flow rate of the gas stream, 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)]}

8,600=operating hours per year

(i) Method 18 shall be used to determine the concentration of each individual organic component ($C_j$) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site. If the gas stream is controlled in an existing control device, the sampling site shall be before the inlet of the control device and after all product recovery units.

(ii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the volumetric flow rate (Q). If necessary, Method 4 shall be used to determine the moisture content. Both determinations shall be compatible with the Method 18 determinations.

(iii) 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 weight percent VOC of the uncontrolled individual vent stream shall be determined using the following equation:

$$\text{weight \% TOC} = \frac{\sum_{j=1}^{n} C_j M_j}{MW_{avg} \times 10^6} \times 100$$

where:

$C_j$=concentration of sample TOC component "j" of the gas stream, dry basis, ppmv.

$M_j$=Molecular weight of sample TOC component "j" of the gas stream, g/g-mole (lb/lb-mole).

$MW_{avg}$=Average molecular weight of the entire gas stream, g/g-mole (lb/lb-mole).

(i) Method 18 shall be used to determine the concentration of each individual organic component ($C_j$) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site. If the gas stream is controlled in an existing control device, the sampling site shall be before the inlet of the control device and after all product recovery units. If necessary, Method 4 shall be used to determine the moisture content. This determination shall be compatible with the Method 18 determinations.

(ii) The average molecular weight of the gas stream shall be determined using methods approved by the Administrator. If the carrier component of the gas stream is nitrogen, then an average molecular weight of 28 g/g-mole (lb/lb-mole) may be used in lieu of testing. If the carrier component of the gas stream is air, then an average molecular weight of 29 g/g-mole (lb/lb-mole) may be used in lieu of testing.

(iii) 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.

(e) The owner or operator shall determine compliance of flares with the visible emission and flare provisions in § 60.562-1 as follows:

(1) Method 22 shall be used to determine visible emissions. The observation period for each run shall be 2 hours.

(2) The monitoring device of § 60.563(b)(2) shall be used to determine whether a flame is present.

(f) The owner or operator shall determine compliance with the net heating value provisions in § 60.18 as referenced by § 60.562-1(a)(1)(i)(C). The net heating value of the process vent stream being combusted in a flare shall be computed as follows:

$$H_T = K_2 \left( \sum_{j=1}^{n} C_j H_j \right)$$

where:

$H_T$=Net heating value of the sample based on the net enthalpy per mole of offgas combusted at 25 °C and 760 mmHg, but the standard temperature for determining the volume corresponding to one mole is 20 °C, MJ/scm.

$K_2$=Conversion constant,

$$\frac{(1)}{\text{ppm}} \; \frac{(\text{g mole})}{\text{scm}} \; \frac{(\text{MJ.})}{\text{kcal}}$$

where standard temperature for

$$\frac{(\text{g mole})}{\text{scm}}$$ is 20 °C;

$C_j$=Concentration of sample component j in ppm on a wet basis.

$H_j$=Net heat of combustion of sample component j, at 25 °C and 760 mm Hg, kcal/g-mole.

(1) Method 18 shall be used to determine the concentration of each individual organic component ($C_j$) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site to the inlet of the flare. Using this same sample, ASTM D1946-77 (incorporated by reference—see § 60.17) shall be used to determine the hydrogen and carbon monoxide content.

(2) 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.

(3) Published or calculated values shall be used for the net heats of combustion of the sample components. If values are not published or cannot be calculated, ASTM D2382-76 (incorporated by reference—see § 60.17) may be used to determine the net heat of combustion of component "j."

(g) The owner or operator shall determine compliance with the exit velocity provisions in § 60.18 as referenced by § 60.562-1(a)(1)(i)(C) as follows:

(1) If applicable, the net heating value ($H_T$) of the process vent shall be determined according to the procedures in paragraph (f) of this section to determine the applicable velocity requirements.

(2) If applicable, the maximum permitted velocity ($V_{max}$) for steam-assisted and nonassisted flares shall be computed using the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

where:

$V_{max}$=Maximum permitted velocity, m/sec.

28.8=Constant.

31.7=Constant.

$H_T$=The net heating value as determined in paragraph (f) of this section.

(3) The maximum permitted velocity, $V_{max}$, 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/sec.

8.706=Constant.

0.7084=Constant.

$H_T$=The net heating value as determined in paragraph (f) of this section.

(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.

(h) The owner or operator shall determine compliance with the mass emission per mass product standards in §§ 60.560 (d) and (e) and in §§ 60.562-1 (b)(1)(i), (c)(1)(i)(A), (c)(1)(ii)(A), (c)(2)(i), and (c)(2)(ii)(A). The emission rate of TOC shall be computed using the following equation:

$$ER_{TOC} = \frac{\frac{E_{TOC}}{1\ Mg}}{P_p \times 1{,}000\ kg}$$

where:

$ER_{TOC}$=Emission rate of total organic compounds (minus methane and ethane), kg TOC/Mg product.

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

$P_p$=The rate of polymer produced, kg/hr.

(1) The mass rate of TOC, $E_{TOC}$, shall be determined according to the procedures, as appropriate, in paragraph (c)(2) of this section. The sampling site for determining compliance with §§ 60.560 (d) and (e) shall be before any add-on control devices and after all product recovery devices. Otherwise, the sampling site shall be at the outlet of the control device.

(2) The rate of polymer produced, $P_p$ (kg/hr), shall be determined by dividing the weight of polymer pulled in kilograms (kg) from the process line during the performance test by the number of hours (hr) taken to perform the performance test. The polymer pulled, in kilograms, shall be determined by direct measurement or, subject to prior approval by the Administrator, computed from materials balance by good engineering practice.

(i) The owner or operator shall determine continuous compliance with the temperature requirements in §§ 60.562-1(b)(1)(ii) and 60.562-1(c)(1)(i)(B) by using the temperature monitoring equipment described in § 60.563(a)(1). An average temperature shall be determined from measurements taken at least every 15 minutes every three hours while the vent stream is normally routed and constituted. Each three-hour period constitutes a performance test.

(j) For purposes of determining compliance with § 60.562-1(c) (1)(ii)(B), (1)(ii)(C), (2)(ii)(B), or (2)(ii)(C), the ethylene glycol concentration in either the cooling tower or the liquid effluent from steam-jet ejectors used to produce a vacuum in the polymerization reactors, whichever is applicable, shall be determined:

(1) Using procedures that conform to the methods described in ASTM D2908-74, "Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography" (incorporated by reference—see § 60.17), except as provided in paragraph (j)(2) of this section:

(i) At least one sample per operating day shall be collected using the grab sampling procedures of ASTM D3370-76, "Standard Practices for Sampling Water" (incorporated by reference—see § 60.17). An average ethylene glycol concentration by weight shall be calculated on a daily basis over a rolling 14-day period of operating days, except as provided in paragraphs (j)(1) (ii) and (iii) of this section. Each daily average ethylene glycol concentration so calculated constitutes a performance test. Exceedance of the standard during the reduced testing program specified in paragraphs (j)(1) (ii) and (iii) of this section is a violation of these standards.

(ii) For those determining compliance with § 60.562-1(c) (1)(ii)(B) or (2)(ii)(B), the owner or operator may elect to reduce the sampling program to any 14 consecutive day period once every two calendar months, if at least seventeen consecutive 14-day rolling average concentrations immediately preceding the reduced sampling program are each less than 0.10 weight percent ethylene glycol. If the average concentration obtained over the 14 day sampling during the reduced testing period exceeds the upper 95 percent confidence interval calculated from the most recent test results in which no one 14-day average exceeded 0.10 weight percent ethylene glycol, then the owner or operator shall reinstitute a daily sampling program. A reduced sampling program can be reinstituted if the requirements specified in this paragraph are met.

(iii) For those determining compliance with § 60.562-1(c)(1)(ii)(C) or (c)(2)(ii)(C), the owner or operator may elect to reduce the sampling program to any 14 consecutive day period once every two calendar months, if at least seventeen consecutive 14-day rolling average concentrations immediately preceding the reduced sampling program are each less than 1.8 weight percent ethylene glycol. If the average concentration obtained over the 14 day sampling during the reduced test period exceeds the upper 95 percent confidence interval calculated from the most recent test results in which no one 14-day average exceeded 1.8 weight percent ethylene glycol, then the owner or operator shall reinstitute a daily sampling program. A reduced program can be reinstituted if the requirements specified in this paragraph are met.

(iv) The upper 95 percent confidence interval shall be calculated using the equation:

$$CI_{95} = \frac{\sum_{i=1}^{n} X_i}{n} + 2\sqrt{\frac{n\Sigma x^2-(\Sigma x)^2}{n(n-1)}}$$

where:

$X_i$=daily ethylene glycol concentration for each day used to calculate each 14-day rolling average used in test results to justify implementing the reduced testing program.

n=number of ethylene glycol concentrations.

(2) Measuring an alternative parameter, such as carbon oxygen demand or biological oxygen demand, that is demonstrated to be directly proportional to the ethylene glycol concentration. Such parameter shall be measured during the initial 14-day performance test during which the facility is shown to be in compliance with the ethylene glycol concentration standard whereby the ethylene glycol concentration is determined using the procedures described in paragraph (j)(1) of this section. The alternative parameter shall be measured on a daily basis and the average value of the alternative parameter shall be calculated on a daily basis over a rolling 14-day period of operating days. Each daily average value of the alternative parameter constitutes a performance test.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991]

## § 60.565 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily-accessible record of the following information measured during each performance test, and shall include the following information in the report of the initial performance test in addition to the written results of such performance tests as required under § 60.8. Where a control device is used to comply with § 60.562-1(a)(1)(i)(D) only, a report containing performance test data need not be submitted, but a report containing the information in § 60.565(a)(11) is required. Where a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater is used to comply with § 60.562-1(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.565(a)(2)(i) is required. The same information specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device or the outlet concentration of TOC (minus methane and ethane) is determined.

(1) When an incinerator is used to demonstrate compliance with § 60.562-1, except § 60.562-1(a)(2):

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed), measured at least every 15 minutes and averaged over the performance test period, and

(ii) The percent reduction of TOC (minus methane and ethane) achieved by the incinerator, the concentration of TOC (minus methane and ethane) (ppmv, by compound) at the outlet of the control device on a dry basis, or the emission rate in terms of kilograms TOC (minus methane and ethane) per megagram of product at the outlet of the control device, whichever is appropriate. If supplemental combustion air is used, the TOC concentration corrected to 3 percent oxygen shall be recorded and reported.

(2) When a boiler or process heater is used to demonstrate compliance with § 60.562-1, except § 60.562-1(a)(2):

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) For boiler or process heaters with a design heat input capacity of less than 150 million Btu/hr, 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 performance test at which compliance was determined.

(3) When a flare is used to demonstrate compliance with § 60.562-1, except § 60.562-1(a)(2):

(i) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test,

(ii) Continuous records of the pilot flame heat-sensing monitoring, and

(iii) Records of all periods of operations during which the pilot flame is absent.

(4) When an incinerator, boiler, or process heater is used to demonstrate compliance with § 60.562-1(a)(2), a description of the location at which the vent stream is introduced into the incinerator, boiler, or process heater.

(5) When a flare is used to demonstrate compliance with § 60.562-1(a)(2):

(i) All visible emission readings made during the performance test,

(ii) Continuous records of the pilot flame heat-sensing monitoring, and

(iii) Records of all periods of operation during which the pilot flame is absent.

(6) When an absorber is the final unit in a system to demonstrate compliance with § 60.562-1, except § 60.562-1(a)(2), the specific gravity (or alternative parameter that is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average temperature, measured at least every 15 minutes and averaged over the performance test period, of the absorbing liquid (both measured while the vent stream is normally routed and constituted).

(7) When a condenser is the final unit in a system to demonstrate compliance with § 60.562-1, except § 60.562-1(a)(2), the average exit (product side) temperature, measured at least every 15 minutes and averaged over the performance test period while the vent stream is normally routed and constituted.

(8) Daily measurement and daily average 14-day rolling average of the ethylene glycol concentration in the liquid effluent exiting the vacuum system servicing the polymerization reaction section, if an owner or operator is subject to § 60.562-1(c) (1)(ii)(B) or (2)(ii)(B), or of the ethylene glycol concentration in the cooling water in the cooling tower, if subject to § 60.562-1(c) (2)(ii)(C) or (2)(iii)(C).

(9) When a carbon adsorber is the final unit in a system to demonstrate compliance with § 60.562-1, except § 60.562-1(a)(2): the concentration level or reading indicated by the organics monitoring device at the outlet of the adsorber, measured at least every 15 minutes and averaged over the performance test period while the vent stream is normally routed and constituted.

(10) When an owner or operator seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in §§ 60.560 (d) and (e) or with the individual stream exemptions in § 60.560(g), each process operation variable (e.g., pressure, temperature, type of catalyst) that may result in an increase in the uncontrolled emission rate, if § 60.560(d) or (e) is applicable, or in an increase in the uncontrolled annual emissions or the VOC weight percent, as appropriate, if § 60.560(g) is applicable, should such operating variable be changed.

(11) When an owner or operator uses a control device to comply with § 60.562-1(a)(1)(i)(D) alone: all periods when the control device is not operating.

(b)(1) Each owner or operator subject to the provisions of this subpart shall submit with the initial performance test or, if complying with § 60.562-1(a)(1)(i)(D), as a separate report, an engineering report describing in detail the vent system used to vent each affected vent stream to a control device. This report shall include all valves and vent pipes that could vent the stream to the atmosphere, thereby bypassing the control device, and identify which valves are car-sealed opened and which valves are car-sealed closed.

(2) If a vent system containing valves that could divert the emission stream away from the control device is used, each owner or operator subject to the provisions of this subpart shall keep for at least two years up-to-date, readily accessible continuous records of:

(i) All periods when flow is indicated if flow indicators are installed under § 69.563(d)(1).

(ii) All times when maintenance is performed on car-sealed valves, when the car seal is broken, and when the valve position is changed (i.e., from open to closed for valves in the vent piping to the control device and from closed to open for valves that vent the stream directly or indirectly to the atmosphere bypassing the control device).

(c) Where an incinerator is used to comply with § 60.562-1, except §§ 60.562(a)(1)(i)(D) and (a)(2), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily accessible continuous records of:

(1) The temperature measurements specified under § 60.563(b)(1).

(2) Records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded are defined as follows:

(i) For noncatalytic 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 performance test at which compliance was demonstrated.

(ii) 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 performance test at which compliance was demonstrated. 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 across the catalyst bed during the most recent performance test at which compliance was demonstrated.

(d) Where a boiler or process heater is used to comply with § 60.562-1, except §§ 60.562-1 (a)(1)(i)(D) and (a)(2), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily accessible continuous records of:

(1) Where a boiler or process heater with a heat input design capacity of 150 million Btu/hr or greater is used, 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), and

(2) Where a boiler or process heater with a heat input design capacity of less than 150 million Btu/hr is used, all periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded are defined as 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 performance test at which compliance was demonstrated.

(e) Where a flare is used to comply with § 60.562-1, except § 60.562-1(a)(1)(i)(D), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily accessible continuous records of:

(1) The flare or pilot light flame heat sensing monitoring specified under § 60.563(b)(2), and

(2) All periods of operation in which the flare or pilot flame, as appropriate, is absent.

(f) Where an adsorber, condenser, absorber, or a control device other than a flare, incinerator, boiler, or process heater is used to comply with § 60.562-1, except § 60.562-1(a)(1)(i)(D), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily-accessible continuous records of the periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Where an owner or operator seeks to comply with § 60.562-1, periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final unit in a system:

(i) 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 performance test at which compliance was demonstrated are exceeded, and

(ii) 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 performance test at which compliance was demonstrated (unless monitoring of an alternative parameter that is a measure of the degree of absorbing liquid saturation is approved by the Administrator, in which case he or she will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final unit in a system, all 3-hour periods of operation during which the average condenser operating temperature was more than 6 °C (10 °F) above the average operating temperature during the most recent performance test at which compliance was demonstrated.

(3) Where a carbon adsorber is the final unit in a system, all 3-hour periods of operation during which the average organic concentration level in the carbon adsorber gases is more than 20 percent greater than the exhaust gas concentration level or reading measured by the organics monitoring system during the most recent performance test at which compliance was demonstrated.

(g) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.562-1 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 product recovery equipment; and

(2) The results of any performance test performed pursuant to the procedures specified by § 60.564.

(h) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in §§ 60.560 (d) and (e) or with the individual stream exemptions in § 60.560(g) shall keep for at least 2 years up-to-date, readily accessible records of any change in process operation that increases the uncontrolled emission rate of the process line in which the affected facility is located, if § 60.560 (d) or (e) is applicable, or that increases the uncontrolled annual emissions or the VOC weight percent of the individual stream, if § 60.560(g) is applicable.

(i) Each owner and operator subject to the provisions of this subpart is exempt from § 60.7(c) of the General Provisions.

(j) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.562-1 other than as provided under § 60.565 (a) through (e).

(k) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision of §§ 60.560 (d) and (e), the individual stream exemptions of § 60.560(g), or the requirements of § 60.562-1 shall submit to the Administrator semiannual reports of the following recorded information, as applicable. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under §§ 60.565 (c), (d)(2), and (f).

(2) All periods recorded under § 60.565(b) when the vent stream has been diverted from the control device.

(3) All periods recorded under § 60.565(d) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.565(e) in which the flare or pilot flame was absent.

(5) All periods recorded under § 60.565(a)(8) when the 14-day rolling average exceeded the standard specified in § 60.562-1(c) (1)(ii)(B), (1)(ii)(C), (2)(ii)(B), or (2)(ii)(C), as applicable.

(6) Any change in process operations that increases the uncontrolled emission rate of the process line in which the affected facility is located, as recorded in § 60.565(h).

(7) Any change in process operations that increases the uncontrolled annual emissions or the VOC weight percent of the individual stream, as recorded in § 60.565(h).

(l) Each owner or operator subject to the provisions of this subpart shall notify the Administrator of the specific provisions of § 60.562, § 60.560(d), or § 60.560(e), as applicable, with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial startup required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.562 with which he or she will comply or becomes subject to § 60.562 for the first time (i.e., the owner or operator can no longer meet the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in § 60.560 (d) or (e)), then the owner or operator shall notify the Administrator 90 days before implementing a change and, upon implementing a change, a performance test shall be performed as specified in § 60.564.

(m) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves alternative reporting requirements or means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991]

### § 60.566 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authority contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority which will not be delegated to States: § 60.562-2(c).

(b) Each owner or operator of an affected facility shall determine compliance with the applicable standard in § 60.602(a) by determining and recording monthly the VOC emissions per *Mg solvent feed from each affected facility* for the current and preceding 5 consecutive calendar months and using these values to calculate the 6-month average emissions. Each calculation is considered a performance test. The owner or operator of an affected facility shall use the following procedure to determine VOC emissions for each calendar month;

(1) Install, calibrate, maintain, and operate monitoring devices that continuously measure and permanently record for each calendar month the amount of makeup solvent and solvent feed. These values shall be used in calculating VOC emissions according to paragraph (b)(2) of this section. All monitoring devices, meters, and peripheral equipment shall be calibrated and any error recorded. Total compounded error of the flow measuring and recording devices shall not exceed 1 *percent accuracy over the operating* range. As an alternative to measuring solvent feed, the owner or operator may:

(i) Measure the amount of recovered solvent returned to the solvent feed storage tanks, and use the *following* equation to determine the amount of solvent feed:

Solvent Feed=Makeup Solvent+Recovered Solvent+Change in the Amount of Solvent Contained in the Solvent Feed Holding Tank.

(ii) Measure and record the amount of polymer introduced into the affected facility and the solvent-to-polymer ratio of the spinning solutions, and use *the following equation to determine* the amount of solvent feed:

$$\text{Solvent Feed} = \sum_{i=1}^{n} (\text{Polymer Used})_i \times (\text{Solvent-to-Polymer Ratio})_i$$

where subscript "i" denotes each particular spinning solution used during the test period; *values of "i" vary from* one to the total number of spinning solutions, "n," used during the calendar month.

(2) VOC emissions shall be determined each calendar month by use of the following equations:

$$E=\frac{M_w}{S_w}-N-I \quad \text{and } M_w=M_vS_pD$$

$$S_w=\frac{S_vS_pD}{1000} \quad I=\frac{I_E-I_B}{S_w}$$

where all values are for the calendar month only and where

$E$=Emissions in kg per Mg solvent feed;
$S_v$=Measured or calculated volume of *solvent* feed in liters;
$S_w$=Weight of solvent feed in Mg;
$M_v$=Measured volume of makeup solvent in liters;
$M_w$=Weight of makeup in kg;
$N$=*Allowance for nongaseous losses per Mg* solvent feed; (13 kg/Mg);
$S_p$=Fraction of measured volume that is actual solvent (excludes water);
$D$=Density of the solvent in kg/liter;
$I$=Allowance for solvent inventory variation or changes in the amount of solvent contained in the affected facility per Mg solvent feed (may be positive or negative);
$I_B$=Amount in kg of solvent contained in the affected facility at the beginning of test period, as determined by owner or operator;
$I_E$=Amount in kg of solvent contained in the affected facility at the close of test period, as determined by owner or operator.

(i) N, as used in the equation in paragraph (b)(2) of this section, equals 13 kg per Mg solvent feed to the spinning solution preparation system and precipitation bath. This value shall be used in all cases unless an owner or operator demonstrates to the satisfaction of the Administrator that greater nongaseous losses occur at the affected facility. In this case, the greater value may be substituted in the equation.

(Approved by the Office of Management and Budget under control number 2060-0059)

[49 FR 13651, Apr. 5, 1984; 49 FR 18096, Apr. 27, 1984]

### § 60.604 Reporting requirements.

(a) The owner or operator of an affected facility shall submit a written report to the Administrator of the following:

(1) The results of the initial performance test; and

(2) The results of subsequent performance tests that indicate that VOC emissions exceed the standards in § 60.602. These reports shall be submitted quarterly at 3-month intervals after the initial performance test. If no exceedances occur during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(b) Solvent-spun synthetic fiber producing facilities exempted from these standards in § 60.600(a) (those producing less than 500 megagrams annually) shall report to the Administrator within 30 days whenever extruded fiber for the preceding 12 calendar months exceeds 500 megagrams.

(c) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternate means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

NOTE: This regulation does not involve a "collection of information" as defined under the Paperwork Reduction Act of 1980 (Pub. L. 56-511). Therefore, the *provisions* of the Paperwork Reduction Act applicable to collections of information do not apply to this regulation.

(Approved by the Office of Management and Budget under control number 2060-0059)

[49 FR 13651, Apr. 5, 1984, as amended at 55 FR 51384, Dec. 13, 1990]

## Subpart III—Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes

SOURCE: 55 FR 26922, June 29, 1990, unless otherwise noted.

### § 60.610 *Applicability and designation of affected facility.*

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that produces any of the chemicals listed in § 60.617 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c) of this section.

(b) The affected facility is any of the *following for which construction,* modification, or reconstruction commenced after October 21, 1983:

(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.

(3) Each combination of two or more air oxidation reactors and the common recovery system into which their vent streams are discharged.

(c) Each affected facility that has a total resource effectiveness (TRE) index value greater than 4.0 is exempt from all provisions of this subpart except for §§ 60.612, 60.614(f), 60.615(h), and 60.615(l).

[NOTE: The intent of these standards is to minimize the emissions of VOC through the application of BDT. The numerical emission limits in these standards are expressed in terms of total organic compounds (TOC), measured as TOC minus methane and ethane. This emission limit reflects the performance of BDT.]

### § 60.611 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms *shall have the specific meanings given* them.

*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 reactions are included in this definition.

*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.

*Air Oxidation Unit Process* means a unit process, including ammoxidation and oxychlorination unit process, that uses air, or a combination of air and oxygen, as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds.

*Boilers* means any enclosed combustion device that extracts useful energy in the form of steam.

*By Compound* means by individual stream components, not carbon equivalents.

*Continuous recorder* means a data recording device recording an instantaneous data value at least once every 15 minutes.

*Flame zone* means the portion of the combustion chamber in a boiler occupied by the flame envelope.

*Flow indicator* means a device which indicates whether gas flow is present in a vent stream.

*Halogenated Vent Stream* means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

*Incinerator* means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

*Process Heater* means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.

*Process Unit* means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.617. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

*Product* means any compound or chemical listed in § 60.617 that is produced for sale as a final product as that chemical or is produced for use in a process that needs that chemical for the production of other chemicals in another facility. By-products, co-products, and intermediates are considered to be products.

*Recovery Device* means an individual unit of equipment, such as an absorber, condenser, and carbon adsorber, capable of and used to recover chemicals for use, reuse or sale.

*Recovery System* means an individual recovery device or series of such devices applied to the same process stream.

*Total organic compounds (TOC)* means those compounds measured according to the procedures in § 60.614(b)(4). For the purposes of measuring molar composition as required in § 60.614(d)(2)(i), hourly emissions rate as required in § 60.614(d)(5) and § 60.614(e) and TOC concentration as required in § 60.615(b)(4) and § 60.615(g)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded. The compounds to be excluded are identified in Environmental Protection Agency's statements on ozone abatement policy for SIP revisions (42 FR 35314; 44 FR 32042; 45 FR 32424; 45 FR 48942).

*Total resource effectiveness (TRE) Index Value* means a measure of the supplemental total resource requirement per unit reduction of TOC associated with an individual air oxidation vent stream, based on vent stream flow rate, emission rate of TOC, net heating value, and corrosion properties (whether or not the vent stream is halogenated), as quantified by the equation given under § 60.614(e).

*Vent Stream* means any gas stream, containing nitrogen which 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. The vent stream excludes equipment leaks and relief valve discharges including, but not limited to, pumps, compressors, and valves.

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990]

### § 60.612 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by § 60.8 and § 60.614 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (minus methane and ethane) by 98 weight-percent, or to a TOC (minus methane and ethane) concentration of 20 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 paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

### § 60.613 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.612(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.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox.

(ii) 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 affected facility. The flow indicator shall be installed in the vent stream from each affected 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 affected facility that uses a flare to seek to comply with § 60.612(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 affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.612(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications in 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 affected facility. The flow indicator shall be installed in the vent stream from each air oxidation reactor within an affected 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 is 44 MW (150 million Btu/hr) or greater. The records must be readily available for inspection.

(d) The owner or operator of an affected facility that seeks to demonstrate compliance with the TRE index value limit specified under § 60.612(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in a recovery system:

(i) 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 units, each equipped with a continuous recorder;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in a recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an acuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or 0.5 °C, whichever is greater;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device in a recovery system:

(i) 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;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(e) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.612 with control devices other than an incinerator, boiler, process heater, or flare; or recovery devices other than an absorber, condenser, or carbon adsorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

## § 60.614 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.612, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under § 60.8(b) shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.612(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 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 TOC samples and the samples shall be taken during the same time that the TOC samples are taken.

The TOC concentration corrected to 3 percent $O_2$ ($C_c$) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

$C_c$=Concentration of TOC corrected to 3 percent $O_2$, dry basis, ppm by volume.

$C_{TOC}$=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

%$O_{2d}$=Concentration of $O_2$, dry basis, percent by volume.

(4) Method 18 to determine concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) 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.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, precent by weight.

$E_i$=Mass rate of TOC entering the control device, kg TOC/hr.

$E_o$=Mass rate of TOC discharged to the atmosphere, kg TOC/hr.

(iii) The mass rates of TOC ($E_i$, $E_o$) 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, dry basis ppm by volume.

$M_{ij}$, $M_{oj}$=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.

(iv) The TOC concentration ($C_{TOC}$) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

$C_{TOC}$=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$C_j$=Concentration of sample components in the sample.

n=Number of components in the sample.

(5) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek to comply with § 60.612(a), the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(c) When a flare is used to seek to comply with § 60.612(b), the flare shall comply with the requirements of § 60.18.

(d) The following test methods in appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under § 60.612(b) and for determining the process vent stream TRE index value to determine compliance under § 60.612(c).

(1)(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 § 60.614(d) (2) and (3) shall be, except for the situations outlined in paragraph (d)(1)(ii) of this section, 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.

(ii) If any gas stream other than the air oxidation vent stream from the affected facility 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 TOC 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 TOC concentration measured prior to the final recovery device and prior to the introduction of the nonair oxidation stream to determine the concentration of TOC in the air oxidation stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.614(d) (4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946–77 (incorporation by reference as specified in § 60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) 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 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, $1.740 \times 10^{-7}$

$$\frac{(1)}{\text{ppm}} \; \frac{(\text{g mole})}{\text{scm}} \; \frac{(\text{MJ})}{\text{kcal}},$$

where standard temperature for

$$\frac{(\text{g-mole})}{\text{scm}}$$

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 (incorporated by reference as specified in § 60.17 of this part) as indicated in § 60.614(d)(2).

$H_j$=Net heat of combustion 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 (incorporation by reference as specified in § 60.17 of this part) if published values are not available or cannot be calculated.

(5) The emission rate of TOC in the process vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2\left[\sum_{j=1}^{n} C_j M_j\right] Q_s$$

where:

$E_{TOC}$=Emission rate of TOC in the sample, kg/hr

$K_2$=Constant, $2.494 \times 10^{-6}$ (1/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C

$C_j$=Concentration on a basis of compound j in ppm as measured by Method 18 as indicated in § 60.614(d)(2)

$M_j$=Molecular weight of sample j, g/g-mole

$Q_s$=Vent stream flow rate (scm/min) at a standard temperature of 20 °C

(6) The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(e) For purposes of complying with § 60.612(c), the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in paragraph (e)(1) of this section and the flare equation in paragraph (e)(2) of this section and selecting the lower of the two values.

(1) The TRE index value of the vent stream controlled by an incinerator shall be calculated using the following equation:

$$TRE = \frac{1}{E_{TOC}}\left[a + b(Q_s)^{0.88} + c(Q_s) + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5}\right]$$

(i) where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is greater than or equal to 14.2 scm/min:

TRE=TRE index value.

$Q_s$=Vent stream flow rate (scm/min), at a standard temperature of 20 °C.

$H_T$=Vent stream net heating value (MJ/scm), where the net enthalpy of combustion per mole of vent stream 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 $Q_s$.

$Y_s$=$Q_s$ for all vent stream categories listed in Table 1 except for Category E vent streams where $Y_s$=$(Q_s)(H_T)/3.6$.

$E_{TOC}$=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients.

The set of coefficients which apply to a vent stream shall be obtained from Table 1.

TABLE 1. AIR OXIDATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR

DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS. IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 3.5:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 18.8$ | 19.18370 | 0.27580 | 0.75762 | -0.13064 | 0 | 0.01025 |
| $18.8 < Q_s \le 699$ | 20.00563 | 0.27580 | 0.30387 | -0.13064 | 0 | 0.01025 |
| $699 < Q_s \le 1400$ | 39.87022 | 0.29973 | 0.30387 | -0.13064 | 0 | 0.01449 |
| $1400 < Q_s \le 2100$ | 59.73481 | 0.31467 | 0.30387 | -0.13064 | 0 | 0.01775 |
| $2100 < Q_s \le 2800$ | 79.59941 | 0.32572 | 0.30387 | -0.13064 | 0 | 0.02049 |
| $2800 < Q_s \le 3500$ | 99.46400 | 0.33456 | 0.30387 | -0.13064 | 0 | 0.02291 |

DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE > 3.5 MJ/scm:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 18.8$ | 18.84466 | 0.26742 | -0.20044 | 0 | 0 | 0.01025 |
| $18.8 < Q_s \le 699$ | 19.66658 | 0.26742 | -0.25332 | 0 | 0 | 0.01025 |
| $699 < Q_s \le 1400$ | 39.19213 | 0.29062 | -0.25332 | 0 | 0 | 0.01449 |
| $1400 < Q_s \le 2100$ | 58.71768 | 0.30511 | -0.25332 | 0 | 0 | 0.01775 |
| $2800 < Q_s \le 3500$ | 78.24323 | 0.31582 | -0.25332 | 0 | 0 | 0.02049 |
|  | 97.76879 | 0.32439 | -0.25332 | 0 | 0 | 0.02291 |

DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 0.48:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 1340$ | 8.54245 | 0.10555 | 0.09030 | -0.17109 | 0 | 0.01025 |
| $1340 < Q_s \le 2690$ | 16.94386 | 0.11470 | 0.09030 | -0.17109 | 0 | 0.01449 |
| $2690 < Q_s \le 4040$ | 25.34528 | 0.12042 | 0.09030 | -0.17109 | 0 | 0.01775 |

DESIGN CATEGORY C. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0.48 < NET HEATING VALUE (MJ/scm) ≤ 1.9:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 1340$ | 9.25233 | 0.06105 | 0.31937 | -0.16181 | 0 | 0.01025 |
| $1340 < Q_s \le 2690$ | 18.36363 | 0.06635 | 0.31937 | -0.16181 | 0 | 0.01449 |
| $2690 < Q_s \le 4040$ | 27.47492 | 0.06965 | 0.31937 | -0.16181 | 0 | 0.01775 |

DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9 < NET HEATING VALUE (MJ/scm) ≤ 3.6:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 1180$ | 6.67868 | 0.06943 | 0.02582 | 0 | 0 | 0.01025 |
| $1180 < Q_s \le 2370$ | 13.21633 | 0.07546 | 0.02582 | 0 | 0 | 0.01449 |
| $2370 < Q_s \le 3550$ | 19.75398 | 0.07922 | 0.02582 | 0 | 0 | 0.01775 |

DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE > 3.6 MJ/scm:

| $Y_s$ = Dilution Flow rate (scm/min) = $(Q_s)(H_T)/3.6$ | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Y_s \le 1180$ | 6.67868 | 0 | 0 | -0.00707 | 0.02220 | 0.01025 |
| $1180 < Y_s \le 2370$ | 13.21633 | 0 | 0 | -0.00707 | 0.02412 | 0.01449 |
| $2370 < Y_s \le 3550$ | 19.75398 | 0 | 0 | -0.00707 | 0.02533 | 0.01775 |

(ii) Where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is less than 14.2 scm/min:

TRE=TRE index value.
$Q_s$=14.2 scm/min.
$H_T$=(FLOW)(HVAL)/14.2.

Where the following inputs are used:

FLOW=Vent stream flow rate (scm/min), at a standard temperature of 20 °C.
HVAL=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to 1 mole is 20 °C as in the definition of $Q_s$.
$Y_s$=14.2 scm/min for all vent stream categories listed in Table 1 except for Category E vent streams, where $Y_s$=(14.2)($H_T$)/3.6.
$E_{TOC}$=Hourly emissions of TOC reported in kg/hr.
a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from Table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}} [a(Q_s) + b(Q_s)^{0.88} + c(Q_s)(H_T) + d(E_{TOC}) + e]$$

where:

TRE=TRE index value.
$E_{TOC}$=Hourly emission rate of TOC reported in kg/hr.
$Q_s$=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.
$H_T$=Vent stream net heating value (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 1 mole is 20 °C as in the definition of $Q_s$.
a, b, c, d, and e are coefficients.

The set of coefficients that apply to a vent stream shall be obtained from Table 2.

TABLE 2—AIR OXIDATION PROCESSES NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE

|  | a | b | c | d | e |
|---|---|---|---|---|---|
| $H_T$ <11.2 MJ/scm | 2.25 | 0.288 | −0.193 | −0.0051 | 2.08 |
| $H_T$ ≥11.2 MJ/scm | 0.309 | 0.0619 | −0.0043 | −0.0034 | 2.08 |

(f) Each owner or operator of an affected facility seeking to comply with § 60.610(c) or § 60.612(c) shall recalculate the TRE index value for that affected 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.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.614 to determine compliance with § 60.612(a). Performance tests must be conducted as soon as possible after the process change but no later than 180

days from the time of the process change.

(2) Where the initial TRE index value is greater than 4.0 and the recalculated TRE index value is less than or equal to 4.0, but greater than 1.0, the owner or operator shall conduct a performance test in accordance with § 60.8 and § 60.614 and shall comply with §§ 60.613, 60.614, and 60.615. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990]

### § 60.615 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.612 shall notify the Administrator of the specific provisions of § 60.612 (§ 60.612 (a) (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.612 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.614 within 180 days.

(b) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to comply with § 60.612(a), a report containing performance test data need not be submitted, but a report containing the information of § 60.615(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a control device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to this subpart seeks to demonstrate compliance with § 60.612(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.614(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.614(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.612(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) 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 performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to comply with § 60.612(b) through the use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator seeks to demonstrate compliance with § 60.612(c):

(i) Where an absorber is the final recovery device in a recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature of the absorbing liquid, measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted), or

(ii) 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 average over the same time period of the performance testing while the vent stream is normally routed and constituted.

(iii) 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 performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s), and duration of the carbon bed steaming cycle (all measured while the vent stream is normally routed and constituted), or

(iv) As an alternative to § 60.615(b)(4)(i), (ii) or (iii), 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 performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under § 60.613(a) and (c) 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. The Administrator 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 § 60.612(a) or (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 performance test at which compliance with § 60.612(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 performance test at which compliance with § 60.612(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 performance test at which compliance with § 60.612(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 performance test at which compliance with § 60.612(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 § 60.612(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flow indication specified under § 60.613(a)(2), § 60.613(b)(2), and § 60.613(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.

(e) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 MW or greater to comply with § 60.612(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).

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified in § 60.613(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(g) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under § 60.613(c) 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. The Administrator may at any time require a report of these data. Where the owner or operator seeks to demonstrate compliance with § 60.612(c), periods of operation during which the parameter boundaries established during the most recent performance 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:

(i) 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 performance test, or

(ii) 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 performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he or she will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) When 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 performance test.

(3) Where a carbon adsorber is the final recovery device in a recovery system and where an organic monitoring device is not used:

(i) 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 performance test, or

(ii) 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 performance 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 Administrator 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 performance test.

(h) Each owner or operator subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.612(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 § 60.614(f);

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.614(d).

(i) Each owner and operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(j) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.612 shall submit to the Administrator semiannual reports of the following information. The initial report shall be submitted within 6 months after the initial start-up-date.

(1) Exceedances of monitored parameters recorded under § 60.615(c) and (g).

(2) All periods recorded under § 60.615(d) when the vent stream is diverted from the control device or has no flow rate.

(3) All periods recorded under § 60.615(e) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.615(f) in which the pilot flame of the flare was absent.

(5) Any recalculation of the TRE index value, as recorded under § 60.615(h).

(k) The requirements of § 60.615(j) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with § 60.615(j), provided that they comply with the requirements established by the State.

(l) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility seeks to demonstrate compliance with the standards specified under § 60.612 other than as provided under § 60.613(a), (b), (c), and (d).

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990]

## § 60.616 Reconstruction.

For purposes of this subpart "fixed capital cost of the new components," as used in § 60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following October 21, 1983. For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

(Approved by the Office of Management and Budget under control number 2060-0053)

## § 60.617 Chemicals affected by subpart III.

| Chemical name | CAS No.* |
|---|---|
| Acetaldehyde | 75-07-0 |
| Acetic acid | 64-19-7 |
| Acetone | 67-64-1 |
| Acetonitrile | 75-05-8 |
| Acetophenone | 98-86-2 |
| Acrolein | 107-02-8 |
| Acrylic acid | 79-10-7 |
| Acrylonitrile | 107-13-1 |
| Anthraquinone | 84-65-1 |
| Benzaldehyde | 100-52-7 |
| Benzoic acid, tech | 65-85-0 |
| 1,3-Butadiene | 106-99-0 |
| p-t-Butyl benzoic acid | 98-73-7 |
| N-Butyric acid | 107-92-6 |
| Crotonic acid | 3724-65-0 |
| Cumene hydroperoxide | 80-15-9 |
| Cyclohexanol | 108-93-0 |
| Cyclohexanone | 108-94-1 |
| Dimethyl terephthalate | 120-61-6 |
| Ethylene dichloride | 107-06-2 |
| Ethylene oxide | 75-21-8 |
| Formaldehyde | 50-00-0 |
| Formic acid | 64-18-6 |
| Glyoxal | 107-22-2 |
| Hydrogen cyanide | 74-90-8 |
| Isobutyric acid | 79-31-2 |
| Isophthalic acid | 121-91-5 |
| Maleic anhydride | 108-31-6 |
| Methyl ethyl ketone | 78-93-3 |
| a-Methyl styrene | 98-83-9 |
| Phenol | 108-95-2 |
| Phthalic anhydride | 85-44-9 |
| Propionic acid | 79-09-4 |
| Propylene oxide | 75-56-9 |
| Styrene | 100-42-5 |
| Terephthalic acid | 100-21-0 |

*CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

## § 60.618 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 60.613(e).

## Subpart JJJ—Standards of Performance for Petroleum Dry Cleaners

SOURCE: 49 FR 37331, Sept. 21, 1984, unless otherwise noted.

### § 60.620 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities located at a petroleum dry cleaning plant with a total manufacturers' rated dryer capacity equal to or greater than 38 kilograms (84 pounds): Petroleum solvent dry cleaning dryers, washers, filters, stills, and settling tanks.

(1) When the affected facility is installed in an existing plant that is not expanding the manufacturers' rated capacity of its petroleum solvent dryer(s), the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated capacity for each existing petroleum solvent dryer.

(2) When the affected facility is installed in a plant that is expanding the manufacturers' rated capacity of its petroleum solvent dryers, the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated dryer capacity for each existing and proposed new petroleum solvent dryer.

(3) When the affected facilty is installed in a new plant, the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated dryer capacity for each proposed new petroleum solvent dryer.

(4) The petroleum solvent dryers considered in the determination of the total manufacturers' rated dryer capacity are those new and existing dryers in the plant that will be in service at any time after the proposed new source or modification commences operation.

(b) Any facility under paragraph (a) of this section that commences construction or modification after December 14, 1982, is subject to the requirements of this subpart with the following exception. A dryer installed between December 14, 1982, and September 21, 1984, in a plant with an annual solvent consumption level of less than 4,700 gallons, is exempt from the requirements of this subpart.

[49 FR 37331, Sept. 21, 1984, as amended at 50 FR 49026, Nov. 27, 1985]

### § 60.621 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in subpart A of this part.

*Cartridge filter* means a discrete filter unit containing both filter paper and activated carbon that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in the installation of this device.

*Dryer* means a machine used to remove petroleum solvent from articles of clothing or other textile or leather goods, after washing and removing of excess petroleum solvent, together with the piping and ductwork used in the installation of this device.

*Manufacturers' rated dryer capacity* means the dryer's rated capacity of articles, in pounds or kilograms of clothing articles per load, dry basis, that is typically found on each dryer on the manufacturer's name-plate or in the manufacturer's equipment specifications.

*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 or solvent, or solvent laden waste standing open to the atmosphere.

*Petroleum dry cleaner* means a dry cleaning facility that uses petroleum solvent in a combination of washers, dryers, filters, stills, and settling tanks.

*Settling tank* means a container that gravimetrically separates oils, grease, and dirt from petroleum solvent, together with the piping and ductwork used in the installation of this device.

*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.

*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.

*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.

*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.

### § 60.622 Standards for volatile organic compounds.

(a) Each affected petroleum solvent dry cleaning dryer that is installed at a petroleum dry cleaning plant after December 14, 1982, shall be a solvent recovery dryer. The solvent recovery dryer(s) shall be properly installed, operated, and maintained.

(b) Each affected petroleum solvent filter that is installed at a petroleum dry cleaning plant after December 14, 1982, shall be a cartridge filter. Cartridge filters shall be drained in their sealed housings for at least 8 hours prior to their removal

(c) Each manufacturer of an affected petroleum solvent dryer shall include leak inspection and leak repair cycle information in the operating manual and on a clearly visible label posted on each affected facility. Such information should state:

> To protect against fire hazards, loss of valuable solvents, and emissions of solvent to the atmosphere, periodic inspection of this equipment for evidence of leaks and prompt repair of any leaks is recommended. The U.S. Environmental Protection Agency recommends that the equipment be inspected every 15 days and all vapor or liquid leaks be repaired within the subsequent 15 day period.

[49 FR 37331, Sept. 21, 1984, as amended at 50 FR 49026, Nov. 27, 1985]

### § 60.623 Equivalent equipment and procedures.

(a) Upon written application from any person, the Administrator may approve the use of equipment or procedures that have been demonstrated to his satisfaction to be equivalent, in terms of reducing VOC emissions to the atmosphere, to those prescribed for compliance within a specified paragraph of this subpart. The application must contain a complete description of the equipment or procedure; the testing method; the date, time and location of the test; and a description of the test results. Written applications shall be submitted to the Administrator, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

(b) The Administrator will make a preliminary determination of whether or not the application for equivalency is approvable and will publish a notice of these findings in the FEDERAL REGISTER. After notice and opportunity for public hearing, the Administrator will publish the final determination in the FEDERAL REGISTER.

### § 60.624 Test methods and procedures.

Each owner or operator of an affected facility subject to the provisions of § 60.622(a) shall perform an initial test to verify that the flow rate of recovered solvent from the solvent recovery dryer at the termination of the recovery cycle is no greater than 0.05 liters per minute. This test shall be conducted for a duration of no less than 2 weeks during which no less than 50 percent of the dryer loads shall be monitored for their final recovered solvent flow rate. The suggested point for measuring the flow rate of recovered solvent is from the outlet of the solvent-water separator. Near the end of the recovery cycle, the entire flow of recovered solvent should be diverted to a graduated cylinder. As the recovered solvent collects in the graduated cylinder, the elapsed time is monitored and recorded in periods of greater than or equal to 1 minute. At the same time, the volume of solvent in the graduated cylinder is monitored determined during the most recent performance test in accordance with the provisions of § 60.646(b)(2). Each 24-hour period must consist of at least 96 temperature measurements equally spaced over the 24 hours.

(c) To certify that a facility is exempt from the control requirements of these standards, each owner or operator of a facility with a design capacity less that 2 LT/D of $H_2S$ in the acid gas (expresssed as sulfur) shall keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 LT/D of $H_2S$ expressed as sulfur.

(d) Each owner or operator who elects to comply with § 60.646(e) shall keep, for the life of the facility, a record demonstrating that the facility's design capacity is less than 150 LT/D of $H_2S$ expressed as sulfur.

(e) The requirements of paragraph (b) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of obligation to comply with paragraph (b) of this section, provided that they comply with the requirements established by the State.

(Approved by the Office of Management and Budget under control number 2060-0120)

### § 60.648 Optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure.[1]

(a) When an instantaneous sample is desired and $H_2S$ concentration is ten grains per 1000 cubic foot or more, a 100 ml Tutwiler burette is used. For concentrations less than ten grains, a 500 ml Tutwiler burette and more dilute solutions are used. In principle, this method consists of titrating hydrogen sulfide in a gas sample directly with a standard solution of iodine.

(b) *Apparatus.* (See Figure 1.) A 100 or 500 ml capacity Tutwiler burette, with two-way glass stopcock at bottom and three-way stopcock at top which connect either with inlet tubulature or glass-stoppered cylinder, 10 ml capacity, graduated in 0.1 ml subdivision; rubber tubing connecting burette with leveling bottle.

(c) *Reagents.* (1) Iodine stock solution, 0.1N. Weight 12.7 g iodine, and 20 to 25 g cp potassium iodide for each liter of solution. Dissolve KI in as little water as necessary; dissolve iodine in concentrated KI solution, make up to proper volume, and store in glass-stoppered brown glass bottle.

(2) Standard iodine solution, 1 ml=0.001771 g I. Transfer 33.7 ml of above 0.1N stock solution into a 250 ml volumetric flask; add water to mark and mix well. Then, for 100 ml sample of gas, 1 ml of standard iodine solution is equivalent to 100 grains $H_2S$ per cubic feet of gas.

(3) Starch solution. Rub into a thin paste about one teaspoonful of wheat starch with a little water; pour into about a pint of boiling water; stir; let cool and decant off clear solution. Make fresh solution every few days.

(d) *Procedure.* Fill leveling bulb with starch solution. Raise (L), open cock (G), open (F) to (A), and close (F) when solutions starts to run out of gas inlet. Close (G). Purge gas sampling line and connect with (A). Lower (L) and open (F) and (G). When liquid level is several ml past the 100 ml mark, close (G) and (F), and disconnect sampling tube. Open (G) and bring starch solution to 100 ml mark by raising (L); then close (G). Open (F) momentarily, to bring gas in burette to atmospheric pressure, and close (F). Open (G), bring liquid level down to 10 ml mark by lowering (L). Close (G), clamp rubber tubing near (E) and disconnect it from burette. Rinse graduated cylinder with a standard iodine solution (0.00171 g I per ml); fill cylinder and record reading. Introduce successive small amounts of iodine thru (F); shake well after each addition; continue until a faint permanent blue color is obtained. Record reading; subtract from previous reading, and call difference D.

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[1] Gas Engineers Handbook, Fuel Gas Engineering Practices, The Industrial Press, 93 Worth Street, New York, NY, 1966, First Edition, Second Printing, page 6/25 (Docket A-80-20-A, Entry II-I-67).

(e) With every fresh stock of starch solution perform a blank test as follows: introduce fresh starch solution into burette up to 100 ml mark. Close (F) and (G). Lower (L) and open (G). When liquid level reaches the 10 ml mark, close (G). With air in burette, titrate as during a test and up to same end point. Call ml of iodine used C. Then,

Grains $H_2S$ per 100 cubic foot of gas=100 (D—C)

(f) Greater sensitivity can be attained if a 500 ml capacity Tutwiler burette is used with a more dilute (0.001N) iodine solution. Concentrations less than 1.0 grains per 100 cubic foot can be determined in this way. Usually, the starch-iodine end point is much less distinct, and a blank determination of end point, with $H_2S$-free gas or air, is required.

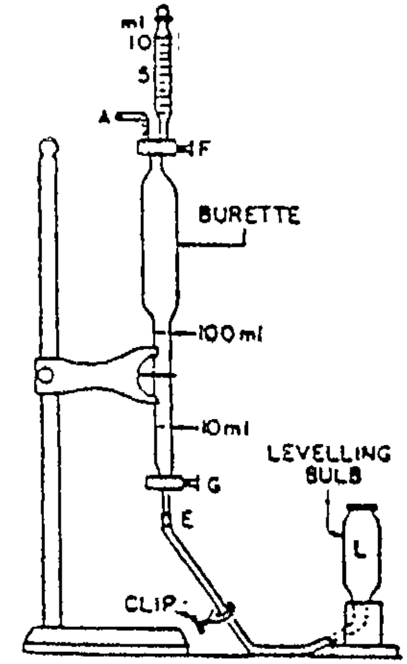

Figure 1. Tutwiler burette (lettered items mentioned in text).

## Subpart MMM [Reserved]

## Subpart NNN—Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

SOURCE: 55 FR 26942, June 29, 1990, unless otherwise noted.

### § 60.660 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in § 60.667 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c).

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after December 30, 1983:

(1) Each distillation unit not discharging its vent stream into a recovery system.

(2) Each combination of a distillation unit and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more distillation units and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any distillation unit operating as part of a process unit which produces coal tar or beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(2) Any distillation unit that is subject to the provisions of Subpart DDD is not an affected facility.

(3) Any distillation unit that is designed and operated as a batch operation is not an affected facility.

(4) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§ 60.662; 60.664 (d), (e), and (f); and 60.665 (h) and (l).

(5) Each affected facility in a process unit with a total design capacity

for all chemicals produced within that unit of less than one gigagram per year is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in paragraphs (j), (l)(6), and (n) of § 60.665.

(6) Each affected facility operated with a vent stream flow rate less than 0.008 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in § 60.664(g) and paragraphs (i), (l)(5), and (o) of § 60.665.

[NOTE: The intent of these standards is to minimize the emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of total organic compounds (TOC), measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.]

### § 60.661 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

*Batch distillation operation* means a noncontinuous distillation operation in which a discrete quantity or batch of liquid feed is charged into a distillation unit and distilled at one time. After the initial charging of the liquid feed, no additional liquid is added during the distillation operation.

*Boiler* means any enclosed combustion device that extracts useful energy in the form of steam.

*By compound* means by individual stream components, not carbon equivalents.

*Continuous recorder* means a data recording device recording an instantaneous data value at least once every 15 minutes.

*Distillation operation* means an operation separating one or more feed stream(s) into two or more exit stream(s), each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor-phase as they approach equilibrium within the distillation unit.

*Distillation unit* means a device or vessel in which distillation operations occur, including all associated internals (such as trays or packing) and accessories (such as reboiler, condenser, vacuum pump, steam jet, etc.), plus any associated recovery system.

*Flame zone* means the portion of the combustion chamber in a boiler occupied by the flame envelope.

*Flow indicator* means a device which indicates whether gas flow is present in a vent stream.

*Halogenated vent stream* means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

*Incinerator* means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

*Process heater* means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.

*Process unit* means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.667. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

*Product* means any compound or chemical listed in § 60.667 that is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

*Recovery device* means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

*Recovery system* means an individual recovery device or series of such devices applied to the same vent stream.

*Total organic compounds* (TOC) means those compounds measured according to the procedures in § 60.664(b)(4). For the purposes of measuring molar composition as required in § 60.664(d)(2)(i); hourly emissions rate as required in § 60.664(d)(5) and § 60.664(e); and TOC concentration as required in § 60.665(b)(4) and § 60.665(g)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded. The compounds to be excluded are identified in Environmental Protection Agency's statements on ozone abatement policy for State Implementation Plans (SIP) revisions (42 FR 35314; 44 FR 32042; 45 FR 32424; 45 FR 48942).

*TRE index value* means a measure of the supplemental total resource requirement per unit reduction of TOC associated with an individual distillation vent stream, based on vent stream flow rate, emission rate of TOC net heating value, and corrosion properties (whether or not the vent stream is halogenated), as quantified by the equation given under § 60.664(e).

*Vent stream* means any gas stream discharged directly from a distillation facility to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks including, but not limited to, pumps, compressors, and valves.

### § 60.662 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by § 60.8 and § 60.664 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 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 paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

### § 60.663 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.662(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.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox.

(ii) 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 affected facility. The flow indicator shall be installed in the vent stream from each affected 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 affected facility that uses a flare to seek to comply with § 60.662(b) shall install, calibrate, maintain and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as a ultra-violet beam 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 affected facility. The flow indicator

shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.662(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications in 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 affected facility. The flow indicator shall be installed in the vent stream from each distillation unit within an affected 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 heat input capacity of the boiler or process heater is 44 MW (150 million Btu/hr) or greater. The records must be readily available for inspection.

(d) The owner or operator of an affected facility that seeks to comply with the TRE index value limit specified under § 60.662(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) 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 units, each equipped with a continuous recorder, or

(ii) 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 the recovery system:

(i) 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, or

(ii) An organic monitoring device used to monitor organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) 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, or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(e) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.662 with control devices other than incinerator, boiler, process heater, or flare; or recovery device other than an absorber, condenser, or carbon absorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will

specify appropriate monitoring procedures or requirements.

### § 60.664 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.662, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under § 60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.662(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 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 TOC samples, and the samples shall be taken during the same time that the TOC samples are taken.

The TOC concentration corrected to 3 percent $O_2$ ($C_c$) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

$C_c$=Concentration of TOC corrected to 3 percent $O_2$, dry basis, ppm by volume.

$C_{TOC}$=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of $O_2$, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) 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.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

$E_i$=Mass rate of TOC entering the control device, kg TOC/hr.

$E_o$=Mass rate of TOC discharged to the atmosphere, kg TOC/hr.

(iii) The mass rates of TOC ($E_i$, $E_o$) 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, dry basis, ppm by volume.

$M_{ij}$, $M_{oj}$=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, $2.494 \times 10^{-6}$ (1/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

(iv) The TOC concentration ($C_{TOC}$) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

$C_{TOC}$=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$C_j$=Concentration of sample components "j", dry basis, ppm by volume.

n=Number of components in the sample.

(5) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek to comply with § 60.662(a), the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(c) When a flare is used to seek to comply with § 60.662(b), the flare shall comply with the requirements of § 60.18.

(d) The following test methods in appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under *§ 60.662(b) and for* determining the process vent stream TRE index value to determine compliance under § 60.662(c).

(1)(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 § 60.664(d) (2) and (3) shall be, except for the situations outlined in paragraph (d)(1)(ii) of this *section*, prior to the inlet of any control device, prior to any post-distillation dilution of the stream with air, and prior to any post-distillation introduction of halogenated compounds into the process vent stream. No transverse site selection method is needed for vents smaller than 4 inches in diameter.

(ii) If any gas stream other than the distillation vent stream from the affected facility 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 nondistillation stream is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any nondistillation vent stream and at the outlet of the final recovery device.

(C) This efficiency is applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of the nondistillation stream to determine the concentration of TOC in the distillation vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.664(d) (4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946-77 (incorporation *by reference as specified in § 60.17 of* this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) 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 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 vent stream 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 $Q_s$ (vent stream flow rate).

$K_1$=Constant, $1.740 \times 10^{-7}$

$$\frac{(1)}{ppm} \; \frac{(g\text{-mole})}{scm} \; \frac{(MJ)}{kcal},$$

where standard temperature for

$$\frac{(g\text{-mole})}{scm}$$

is 20 °C.

$C_j$=Concentration on a wet basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 (incorporation by reference as specified in § 60.17 of this part) as indicated in § 60.664(d)(2).

$H_j$=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 (incorporation by reference as specified in § 60.17 of this part) if *published values are not available* or cannot be calculated.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \left[ \sum_{j=1}^{n} C_j M_j \right] Q_s$$

where:

$E_{TOC}$=Emission rate of TOC in the sample, kg/hr.

$K_2$=Constant, $2.494 \times 10^{-6}$ (l/ppm) (g-mole/*scm*) *(kg/g) (min/hr)*, where standard temperature for (g-mole/scm) is 20 °C.

$C_j$=Concentration on a basis of compound j in ppm as measured by Method 18 as indicated in § 60.664(d)(2).

$M_j$=Molecular weight of sample j, g/g-mole.

$Q_s$=Vent stream flow rate (scm/min) at a temperature of 20 °C.

(6) The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by *compound*) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(e) For purposes of complying with § 60.662(c) the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) and the flare equation in (e)(2) of this section and selecting the lower of the two values.

(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$TRE = \frac{1}{E_{TOC}} [a + b(Q_s) + c(Q_s)^{0.88} + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5}]$$

(i) where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is greater than or equal *to 14.2 scm/min:*

TRE=TRE index value.

$Q_s$=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

$H_T$=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream 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 $Q_s$.

$Y_s$=$Q_s$ for all vent stream categories listed in Table 1 except for Category E vent streams where $Y_s$=$(Q_s)(H_T)/3.6$.

$E_{TOC}$=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from Table 1.

TABLE 1. DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR

DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 3.5.

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 18.8$ | 19.18370 | 0.27580 | 0.75762 | -0.13064 | 0 | 0.01025 |
| $18.8 < Q_s \le 699$ | 20.00563 | 0.27580 | 0.30387 | -0.13064 | 0 | 0.01025 |
| $699 < Q_s \le 1400$ | 39.87022 | 0.29973 | 0.30387 | -0.13064 | 0 | 0.01449 |
| $1400 < Q_s \le 2100$ | 59.73481 | 0.31467 | 0.30387 | -0.13064 | 0 | 0.01775 |
| $2100 < Q_s \le 2800$ | 79.59941 | 0.32572 | 0.30387 | -0.13064 | 0 | 0.02049 |
| $2800 < Q_s \le 3500$ | 99.46400 | 0.33456 | 0.30387 | -0.13064 | 0 | 0.02291 |

DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE > 3.5 MJ/scm:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 18.8$ | 18.84466 | 0.26742 | -0.20044 | 0 | 0 | 0.01025 |
| $18.8 < Q_s \le 699$ | 19.66658 | 0.26742 | -0.25332 | 0 | 0 | 0.01025 |
| $699 < Q_s \le 1400$ | 39.19213 | 0.29062 | -0.25332 | 0 | 0 | 0.01449 |
| $1400 < Q_s \le 2100$ | 58.71768 | 0.30511 | -0.25332 | 0 | 0 | 0.01775 |
| $2800 < Q_s \le 3500$ | 78.24323 | 0.31582 | -0.25332 | 0 | 0 | 0.02049 |
|  | 97.76879 | 0.32439 | -0.25332 | 0 | 0 | 0.02291 |

DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 0.48:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Qs \le 1340$ | 8.54245 | 0.10555 | 0.09030 | -0.17109 | 0 | 0.01025 |
| $1340 < Q_s \le 2690$ | 16.94386 | 0.11470 | 0.09030 | -0.17109 | 0 | 0.01449 |
| $2690 < Q_s \le 4040$ | 25.34528 | 0.12042 | 0.09030 | -0.17109 | 0 | 0.01775 |

DESIGN CATEGORY C. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0.48 < NET HEATING VALUE (MJ/scm) ≤ 1.9:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 1340$ | 9.25233 | 0.06105 | 0.31937 | -0.16181 | 0 | 0.01025 |
| $1340 < Q_s \le 2690$ | 18.36363 | 0.06635 | 0.31937 | -0.16181 | 0 | 0.01449 |
| $2690 < Q_s \le 4040$ | 27.47492 | 0.06965 | 0.31937 | -0.16181 | 0 | 0.01775 |

DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9 < NET HEATING VALUE (MJ/scm) ≤ 3.6:

| $Q_s$ = Vent Stream Flow rate (scm/min) | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Q_s \le 1180$ | 6.67868 | 0.06943 | 0.02582 | 0 | 0 | 0.01025 |
| $1180 < Q_s \le 2370$ | 13.21633 | 0.07546 | 0.02582 | 0 | 0 | 0.01449 |
| $2370 < Q_s \le 3550$ | 19.75398 | 0.07922 | 0.02582 | 0 | 0 | 0.01775 |

DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE > 3.6 MJ/scm:

| $Y_s$ = Dilution Flow rate (scm/min) = $(Q_s)(H_T)/3.6$ | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| $14.2 \le Y_s \le 1180$ | 6.67868 | 0 | 0 | -0.00707 | 0.02220 | 0.01025 |
| $1180 < Y_s \le 2370$ | 13.21633 | 0 | 0 | -0.00707 | 0.02412 | 0.01449 |
| $2370 < Y_s \le 3550$ | 19.75398 | 0 | 0 | -0.00707 | 0.02533 | 0.01775 |

(ii) where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is less than 14.2 scm/min:

TRE=TRE index value.
$Q_s$=14.2 scm/min.
$H_T$=(FLOW)(HVAL)/14.2.

where by the following inputs are used:

FLOW=Vent stream flow rate (scm/min), at a standard temperature of 20 °C.
HVAL=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream 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 definition of $Q_s$.
$Y_s$=14.2 scm/min for all vent stream categories listed in Table 1 except for Category E vent streams, where $Y_s$=(14.2)($H_T$)/3.6.
$E_{TOC}$=Hourly emissions of TOC reported in kg/hr.
a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from Table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}} \left[a\left(Q_s\right)+b\left(Q_s\right)^{0.88}+c\left(Q_s\right)\left(H_T\right)+d\left(E_{TOC}\right)+e\right]$$

where:

TRE=TRE index value.
$E_{TOC}$=Hourly emission rate of TOC reported in kg/hr.
$Q_s$=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.
$H_T$=Vent stream net heating value (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 $Q_s$.
a, b, c, d, and e are coefficients.

The set of coefficients that apply to a vent stream shall be obtained from Table 2.

TABLE 2—DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE

|  | a | b | c | d | e |
|---|---|---|---|---|---|
| $H_T$ <11.2 MJ/scm | 2.25 | 0.288 | −0.193 | −0.0051 | 2.08 |
| $H_T$ >11.2 MJ/scm | 0.309 | 0.0619 | −0.0043 | −0.0034 | 2.08 |

(f) Each owner or operator of an affected facility seeking to comply with § 60.660(c)(4) or § 60.662(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include 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.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.664 in order to determine compliance with § 60.662(a). Performance tests must be conducted as soon as possible after the process change but

no later than 180 days from the time of the process change.

(2) Where the initial TRE index value is greater than 8.0 and the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with §§ 60.8 and 60.664 and shall comply with §§ 60.663, 60.664 and 60.665. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(g) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with § 60.660(c)(6) shall use Method 2, 2A, 2C, or 2D as appropriate, for determination of volumetric flow rate.

### § 60.665 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.662 shall notify the Administrator of the specific provisions of § 60.662 (§ 60.662 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.662 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.664 within 180 days.

(b) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily accessible record of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to comply with § 60.662(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.665(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a control device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.664(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.664(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) 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 performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted), or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally, or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s)), and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally), or

(iv) As an alternative to § 60.665(b)(4) ((i), (ii) or (iii), the concentration level or reading indicated by the organics 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 performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under § 60.663 (a) and (c) 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. The Administrator may at any time require a report of these data. Where a combustion device is used to comply with § 60.662(a), 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 performance test at which compliance with § 60.662(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 performance test at which compliance with § 60.662(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 performance test at which compliance with § 60.662(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 performance test at which compliance with § 60.662(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 § 60.662(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep up to date, readily accessible continuous records of the flow indication specified under § 60.663(a)(2), § 60.663(b)(2) and § 60.663(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.

(e) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 MW or greater to comply with § 60.662(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.)

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under § 60.663(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(g) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under § 60.663(d), 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. The Administrator may at any time require a report of these data. Where an owner or operator seeks to comply with § 60.662(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic compound monitoring device is not used:

(i) 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 performance test, or

(ii) 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 performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where an organic compound 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 performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) 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 performance test, or

(ii) 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 performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound 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 performance test.

(h) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.662(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 a distillation unit;

(2) Any recalculation of the TRE index value performed pursuant to § 60.664(f); and

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.664(d).

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in § 60.660(c)(6) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.008 $m^3$/min and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in § 60.660(c)(5) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(k) Each owner and operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.660 (c)(4), (c)(5), or (c)(6) or § 60.662 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under § 60.665 (c) and (g).

(2) All periods recorded under § 60.665(d) when the vent stream is diverted from the control device or has no flow rate.

(3) All periods recorded under § 60.665(e) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.665(f) in which the pilot flame of the flare was absent.

(5) Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in § 60.660(c)(6), including a measurement of the new vent stream flow rate, as recorded under § 60.665(i). These must be reported as soon as possible after the change and no later than 180 days after the change. A performance test must be completed with the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and $E_{TOC}$. The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under the low capacity exemption status in § 60.660(c)(5), the facility must begin compliance with the requirements set forth in § 60.662.

(6) Any change in equipment or process operation, as recorded under § 60.665(j), that increases the design production capacity above the low capacity exemption level in § 60.660(c)(5) and the new capacity resulting from the change for the distillation process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, $E_{TOC}$. The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under the low flow exemption in § 60.660(c)(6), the facility must begin compliance with the requirements set forth in § 60.662.

(7) Any recalculation of the TRE index value, as recorded under § 60.665(h).

(m) The requirements of § 60.665(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with § 60.665(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with § 60.660(c)(5) must submit to the Administrator an initial report detailing the design production capcity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with § 60.660(c)(6) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in § 60.664.

(p) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.662 other than as provided under § 60.663(a), (b), (c) and (d).

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990]

## § 60.666 Reconstruction.

For purposes of this subpart "fixed capital cost of the new components," as used in § 60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following December 30, 1983. For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

(Approved by the Office of Management and Budget under control number 2060-0055)

## § 60.667 Chemicals affected by subpart NNN.

| Chemical name | CAS No.* |
|---|---|
| Acetaldehyde | 75-07-0 |
| Acetaldol | 107-89-1 |
| Acetic acid | 64-19-7 |
| Acetic anhydride | 108-24-7 |
| Acetone | 67-64-1 |
| Acetone cyanohydrin | 75-86-5 |
| Acetylene | 74-86-2 |
| Acrylic acid | 79-10-7 |
| Acrylonitrile | 107-13-1 |
| Adipic acid | 124-04-9 |
| Adiponitrile | 111-69-3 |
| Alcohols, C-11 or lower, mixtures | |
| Alcohols, C-12 or higher, mixtures | |
| Allyl chloride | 107-05-1 |
| Amylene | 513-35-9 |
| Amylenes, mixed | |
| Aniline | 62-53-3 |
| Benzene | 71-43-2 |
| Benzenesulfonic acid | 98-11-3 |
| Benzenesulfonic acid $C_{10-16}$-alkyl derivatives, sodium salts | 68081-81-2 |
| Benzoic acid, tech | 65-85-0 |
| Benzyl chloride | 100-44-7 |
| Biphenyl | 92-52-4 |
| Bisphenol A | 80-05-7 |
| Brometone | 76-08-4 |
| 1,3-Butadiene | 106-99-0 |
| Butadiene and butene fractions | |
| n-Butane | 106-97-8 |
| 1,4-Butanediol | 110-63-4 |
| Butanes, mixed | |
| 1-Butene | 106-98-9 |
| 2-Butene | 25167-67-3 |
| Butenes, mixed | |
| n-Butyl acetate | 123-86-4 |
| Butyl acrylate | 141-32-2 |
| n-Butyl alcohol | 71-36-3 |
| sec-Butyl alcohol | 78-92-2 |
| tert-Butyl alcohol | 75-65-0 |
| Butylbenzyl phthalate | 85-68-7 |
| Butylene glycol | 107-88-0 |
| tert-Butyl hydroperoxide | 75-91-2 |
| 2-Butyne-1,4-diol | 110-65-6 |
| Butyraldehyde | 123-72-8 |
| Butyric anhydride | 106-31-0 |
| Caprolactam | 105-60-2 |
| Carbon disulfide | 75-15-0 |
| Carbon tetrabromide | 558-13-4 |
| Carbon tetrachloride | 56-23-5 |
| Chlorobenzene | 108-90-7 |
| 2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine | 1912-24-9 |
| Chloroform | 67-66-3 |
| p-Chloronitrobenzene | 100-00-5 |
| Chloroprene | 126-99-8 |
| Citric acid | 77-92-9 |
| Crotonaldehyde | 4170-30-0 |
| Crotonic acid | 3724-65-0 |
| Cumene | 98-82-8 |
| Cumene hydroperoxide | 80-15-9 |
| Cyanuric chloride | 108-77-0 |
| Cyclohexane | 110-82-7 |
| Cyclohexane, oxidized | 68512-15-2 |
| Cyclohexanol | 108-93-0 |
| Cyclohexanone | 108-94-1 |
| Cyclohexanone oxime | 100-64-1 |
| Cyclohexene | 110-83-8 |
| 1,3-Cyclopentadiene | 542-92-7 |
| Cyclopropane | 75-19-4 |
| Diacetone alcohol | 123-42-2 |
| Dibutanized aromatic concentrate | |
| 1,4-Dichlorobutene | 110-57-6 |
| 3,4-Dichloro-1-butene | 64037-54-3 |
| Dichlorodifluoromethane | 75-71-8 |
| Dichlorodimethylsilane | 75-78-5 |
| Dichlorofluoromethane | 75-43-4 |
| -Dichlorohydrin | 96-23-1 |
| Diethanolamine | 111-42-2 |
| Diethylbenzene | 25340-17-4 |
| Diethylene glycol | 111-46-6 |
| Di-n-heptyl-n-nonyl undecyl phthalate | 85-68-7 |
| Di-isodecyl phthalate | 26761-40-0 |
| Diisononyl phthalate | 28553-12-0 |
| Dimethylamine | 124-40-3 |
| Dimethyl terephthalate | 120-61-6 |
| 2,4-Dinitrotoluene | 121-14-2 |
| 2,4-(and 2,6)-dinitrotoluene | 121-14-2<br>606-20-2 |
| Dioctyl phthalate | 117-81-7 |
| Dodecene | 25378-22-7 |
| Dodecylbenzene, non linear | |
| Dodecylbenzenesulfonic acid | 27176-87-0 |
| Dodecylbenzenesulfonic acid, sodium salt | 25155-30-0 |
| Epichlorohydrin | 106-89-8 |
| Ethanol | 64-17-5 |
| Ethanolamine | 141-43-5 |
| Ethyl acetate | 141-78-6 |
| Ethyl acrylate | 140-88-5 |
| Ethylbenzene | 100-41-4 |
| Ethyl chloride | 75-00-3 |
| Ethyl cyanide | 107-12-0 |
| Ethylene | 74-85-1 |
| Ethylene dibromide | 106-93-4 |
| Ethylene dichloride | 107-06-2 |
| Ethylene glycol | 107-21-1 |
| Ethylene glycol monobutyl | 111-76-2 |
| Ethylene glycol monoethyl ether | 110-80-5 |
| Ethylene glycol monoethyl ether acetate | 111-15-9 |
| Ethylene glycol monomethyl ether | 109-86-4 |
| Ethylene oxide | 75-21-8 |
| 2-Ethylhexanal | 26266-68-2 |
| 2-Ethylhexyl alcohol | 104-76-7 |
| (2-Ethylhexyl) amine | 104-75-6 |
| Ethylmethylbenzene | 25550-14-5 |
| 6-Ethyl-1,2,3,4-tetrahydro 9,10-antracenedione | 15547-17-8 |
| Formaldehyde | 50-00-0 |
| Glycerol | 56-81-5 |
| n-Heptane | 142-82-5 |
| Heptenes (mixed) | |
| Hexadecyl chloride | |
| Hexamethylene diamine | 124-09-4 |
| Hexamethylene diamine adipate | 3323-53-3 |
| Hexamethylenetetramine | 100-97-0 |
| Hexane | 110-54-3 |
| 2-Hexenedinitrile | 13042-02-9 |
| 3-Hexenedinitrile | 1119-85-3 |
| Hydrogen cyanide | 74-90-8 |
| Isobutane | 75-28-5 |
| Isobutanol | 78-83-1 |
| Isobutylene | 115-11-7 |
| Isobutyraldehyde | 78-84-2 |
| Isodecyl alcohol | 25339-17-7 |
| Isooctyl alcohol | 26952-21-6 |
| Isopentane | 78-78-4 |
| Isophthalic acid | 121-91-5 |
| Isoprene | 78-79-5 |
| Isopropanol | 67-63-0 |
| Ketene | 463-51-4 |
| Linear alcohols, ethoxylated, mixed | |
| Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed | |
| Linear alcohols, sulfated, sodium salt, mixed | |
| Linear alkylbenzene | 123-01-3 |
| Magnesium acetate | 142-72-3 |
| Maleic anhydride | 108-31-6 |
| Melamine | 108-78-1 |
| Mesityl oxide | 141-79-7 |
| Methacrylonitrile | 126-98-7 |
| Methanol | 67-56-1 |
| Methylamine | 74-89-5 |
| ar-Methylbenzenediamine | 25376-45-8 |
| Methyl chloride | 74-87-3 |
| Methylene chloride | 75-09-2 |
| Methyl ethyl ketone | 78-93-3 |
| Methyl iodide | 74-88-4 |
| Methyl isobutyl ketone | 108-10-1 |
| Methyl methacrylate | 80-62-6 |
| 2-Methylpentane | 107-83-5 |
| 1-Methyl-2-pyrrolidone | 872-50-4 |
| Methyl tert-butyl ether | |
| Naphthalene | 91-20-3 |
| Nitrobenzene | 98-95-3 |
| 1-Nonene | 27215-95-8 |
| Nonyl alcohol | 143-08-08 |
| Nonylphenol | 25154-52-3 |
| Nonylphenol, ethoxylated | 9016-45-9 |
| Octene | 25377-83-7 |
| Oil-soluble petroleum sulfonate, calcium salt | |
| Oil-soluble petroleum sulfonate, sodium salt | |
| Pentaerythritol | 115-77-5 |
| n-Pentane | 109-66-0 |
| 3-Pentenenitrile | 4635-87-4 |
| Pentenes, mixed | 109-67-1 |
| Perchloroethylene | 127-18-4 |
| Phenol | 108-95-2 |
| 1-Phenylethyl hydroperoxide | 3071-32-7 |
| Phenylpropane | 103-65-1 |
| Phosgene | 75-44-5 |
| Phthalic anhydride | 85-44-9 |
| Propane | 74-98-6 |
| Propionaldehyde | 123-38-6 |
| Propionic acid | 79-09-4 |
| Propyl alcohol | 71-23-8 |
| Propylene | 115-07-1 |
| Propylene chlorohydrin | 78-89-7 |
| Propylene glycol | 57-55-6 |
| Propylene oxide | 75-56-9 |
| Sodium cyanide | 143-33-9 |
| Sorbitol | 50-70-4 |
| Styrene | 100-42-5 |
| Terephthalic acid | 100-21-0 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 |
| Tetraethyl lead | 78-00-2 |
| Tetrahydrofuran | 109-99-9 |
| Tetra (methyl-ethyl) lead | |
| Tetramethyl lead | 75-74-1 |
| Toluene | 108-88-3 |
| Toluene-2,4-diamine | 95-80-7 |
| Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture) | 26471-62-5 |
| Tribromomethane | 75-25-2 |
| 1,1,1-Trichloroethane | 71-55-6 |
| 1,1,2-Trichloroethane | 79-00-5 |
| Trichloroethylene | 79-01-6 |
| Trichlorofluoromethane | 75-69-4 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1 |
| Triethanolamine | 102-71-6 |
| Triethylene glycol | 112-27-6 |
| Vinyl acetate | 108-05-4 |
| Vinyl chloride | 75-01-4 |
| Vinylidene chloride | 75-35-4 |
| m-Xylene | 108-38-3 |
| o-Xylene | 95-47-6 |
| p-Xylene | 106-42-3 |
| Xylenes (mixed) | 1330-20-7 |
| m-Xylenol | 576-26-1 |

* CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

## § 60.668 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under § 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 60.663(e).

## Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

SOURCE: 51 FR 31337, Aug. 1, 1985, unless otherwise noted.

### § 60.670 Applicability and designation of affected facility.

(a) Except as provided in paragraphs (b), (c) and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station.

(b) An affected facility that is subject to the provisions of subpart F or I or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.

(c) Facilities at the following plants are not subject to the provisions of this subpart:

(1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 23 megagrams per hour (25 tons per hour) or less;

(2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 136 megagrams per hour (150 tons per hour) or less; and

(3) Common clay plants and pumice plants with capacities, as defined in § 60.671, of 9 megagrams per hour (10 tons per hour) or less.

(d)(1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in § 60.671, having the same function as the existing facility, the new facility is exempt from the provisions of §§ 60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.

(2) An owner or operator seeking to comply with this paragraph shall comply with the reporting requirements of § 60.676 (a) and (b).

(3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§ 60.672, 60.674 and 60.675.

(e) An affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this part.

### § 60.671 Definitions.

All terms used in this subpart, but *not specifically defined in this section*, shall have the meaning given them in the Act and in subpart A of this part.

*Bagging operation* means the mechanical process by which bags are filled with nonmetallic minerals.

*Belt conveyor* means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

*Bucket elevator* means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

*Building* means any frame structure with a roof.

*Capacity* means the cumulative rated capacity of all initial crushers that are part of the plant.

*Capture system* means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more process operations to a control device.

*Control device* means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more process operations at a nonmetallic mineral processing plant.

*Conveying system* means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

*Crusher* means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

*Enclosed truck or railcar loading station* means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

*Fixed plant* means any nonmetallic mineral processing plant at which the processing equipment specified in § 60.670(a) is attached by a cable, chain, turnbuckle, bolt *or other means* (except electrical connections) to any anchor, slab, or structure including bedrock.

*Fugitive emission means particulate* matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

*Grinding mill* means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

*Initial crusher* means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

*Nonmetallic mineral* means any of the following minerals or any mixture of which the majority is any of the following minerals:

(a) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.

(b) Sand and Gravel.

(c) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.

(d) Rock Salt.

(e) Gypsum.

(f) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.

(g) Pumice.

(h) Gilsonite.

(i) Talc and Pyrophyllite.

(j) Boron, including Borax, Kernite, and Colemanite.

(k) Barite.

(l) Fluorospar.

(m) Feldspar.

(n) Diatomite.

(o) Perlite.

(p) Vermiculite.

(q) Mica.

(r) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

*Nonmetallic mineral processing plant* means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt con*crete plants, portland cement plants,* or any other facility processing nonmetallic minerals except as provided in § 60.670 (b) and (c).

*Portable plant means any nonmetallic* mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a *lifting or pulling force. In addition,* there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

*Production line* means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

*Screening operation* means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

*Size* means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging opered quarterly in accordance with procedures under § 60.13(b).

### § 60.684 Recordkeeping and reporting requirements.

(a) At 30-minute intervals during each 2-hour test run of each performance test of a wet scrubber control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(a).

(b) At 30-minute intervals during each 2-hour test run of each performance test of a wet electrostatic precipitator control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(b), except that the concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.

(c) Records of the measurements required in paragraphs (a) and (b) of this section must be retained for at least 2 years.

(d) Each owner or operator shall submit written semiannual reports of exceedances of control device operating parameters required to be monitored by paragraphs (a) and (b) of this section and written documentation of, and a report of corrective maintenance required as a result of, quarterly calibrations of the monitoring devices required in § 60.683(c). For the purpose of these reports, exceedances are defined as any monitoring data that are less than 70 percent of the lowest value or greater than 130 percent of the highest value of each operating parameter recorded during the most recent performance test.

(e) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

(Approved by the Office of Management and Budget under control number 2060-0062)

### § 60.685 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in § 60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(C_t\,Q_{sd})/(P_{avg}\,K)$$

where:

$E$=emission rate of particulate matter, kg/Mg (lb/ton).

$C_t$=concentration of particulate matter, g/dscm (g/dscf).

$Q_{sd}$=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

$P_{avg}$=average glass pull rate, Mg/hr (ton/hr).

$K$=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5E shall be used to determine the particulate matter concentration ($C_t$) and the volumetric flow rate ($Q_{sd}$) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90 dscf).

(3) The average glass pull rate ($P_{avg}$) for the manufacturing line shall be the arithmetic average of three glass pull rate ($P_i$) determinations taken at intervals of at least 30 minutes during each run.

The individual glass pull rates ($P_i$) shall be computed using the following equation:

$$P_i=K'\,L_s\,W_m\,M\,[1.0-(LOI/100)]$$

where:

$P_i$=glass pull rate at interval "i", Mg/hr (ton/hr).

$L_s$=line speed, m/min (ft/min).

$W_m$=trimmed mat width, m (ft).

$M$=mat gram weight, g/m² (lb/ft²).

LOI=loss on ignition, weight percent.

$K'$=conversion factor, $6\times10^{-5}$ (min-Mg)/(hr-g) [$3\times10^{-2}$ (min-ton)/(hr-lb)].

(i) ASTM Standard Test Method D2584-68 (Reapproved 1979) (incorporated by reference—see § 60.17), shall be used to determine the LOI for each run.

(ii) Line speed ($L_s$), trimmed mat width ($W_m$), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.

(d) To comply with § 60.684(d), the owner or operator shall record measurements as required in § 60.684 (a) and (b) using the monitoring devices in § 60.683 (a) and (b) during the particulate matter runs.

[54 FR 6680, Feb. 14, 1989]

## Subpart QQQ—Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

SOURCE: 53 FR 47623, Nov. 23, 1988, unless otherwise noted.

### § 60.690 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction is commenced after May 4, 1987.

(2) An individual drain system is a separate affected facility.

(3) An oil-water separator is a separate affected facility.

(4) An aggregate facility is a separate affected facility.

(b) Notwithstanding the provisions of 40 CFR 60.14(e)(2), the construction or installation of a new individual drain system shall constitute a modification to an affected facility described in § 60.690(a)(4). For purposes of this paragraph, a new individual drain system shall be limited to all process drains and the first common junction box.

### § 60.691 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of 40 CFR part 60, and the following terms shall have the specific meanings given them.

*Active service* means that a drain is receiving refinery wastewater from a process unit that will continuously maintain a water seal.

*Aggregate facility* means an individual drain system together with ancillary downstream sewer lines and oil-water separators, down to and including the secondary oil-water separator, as applicable.

*Catch basin* means an open basin which serves as a single collection point for stormwater runoff received directly from refinery surfaces and for refinery wastewater from process drains.

*Closed vent system* means a system that is not open to the atmosphere and is composed of piping, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission source to a control device.

*Completely closed drain system* means an individual drain system that is not open to the atmosphere and is equipped and operated with a closed vent system and control device complying with the requirements of § 60.692-5.

*Control device* means an enclosed combustion device, vapor recovery system or flare.

*Fixed roof* means a cover that is mounted to a tank or chamber in a stationary manner and which does not move with fluctuations in wastewater levels.

*Floating roof* means a pontoon-type or double-deck type cover that rests on the liquid surface.

*Gas-tight* means operated with no detectable emissions.

*Individual drain system* means all process drains connected to the first common downstream junction box. The term includes all such drains and common junction box, together with their associated sewer lines and other junction boxes, down to the receiving oil-water separator.

*Junction box* means a manhole or access point to a wastewater sewer system line.

*No detectable emissions* means less than 500 ppm above background levels, as measured by a detection instrument in accordance with Method 21 in appendix A of 40 CFR part 60.

*Non-contact cooling water system* means a once-through drain, collection and treatment system designed and operated for collecting cooling water which does not come into contact with hydrocarbons or oily wastewater and which is not recirculated through a cooling tower.

*Oil-water separator* means wastewater treatment equipment used to separate oil from water consisting of a separation tank, which also includes the forebay and other separator basins, skimmers, weirs, grit chambers, and sludge hoppers. Slop oil facilities, including tanks, are included in this term along with storage vessels and auxiliary equipment located between individual drain systems and the oil-water separator. This term does not include storage vessels or auxiliary equipment which do not come in contact with or store oily wastewater.

*Oily wastewater* means wastewater generated during the refinery process which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including cooling water, condensed stripping steam, tank draw-off, and contact process water.

*Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

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

*Sewer line* means a lateral, trunk line, branch line, ditch, channel, or other conduit used to convey refinery wastewater to downstream components of a refinery wastewater treatment system. This term does not include buried, below-grade sewer lines.

*Slop oil* means the floating oil and solids that accumulate on the surface of an oil-water separator.

*Storage vessel* means any tank, reservoir, or container used for the storage of petroleum liquids, including oily wastewater.

*Stormwater sewer system* means a drain and collection system designed and operated for the sole purpose of collecting stormwater and which is segregated from the process wastewater collection system.

*Wastewater system* means any component, piece of equipment, or installation that receives, treats, or processes oily wastewater from petroleum refinery process units.

*Water seal controls* means a seal pot, p-leg trap, or other type of trap filled with water that has a design capability to create a water barrier between the sewer and the atmosphere.

### § 60.692-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.692-1 to 60.692-5 and with §§ 60.693-1 and 60.693-2, except during periods of startup, shutdown, or malfunction.

(b) Compliance with §§ 60.692-1 to 60.692-5 and with §§ 60.693-1 and 60.693-2 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.696.

(c) Permission to use alternative means of emission limitation to meet the requirements of §§ 60.692-2 through 60.692-4 may be granted as provided in § 60.694.

(d)(1) Stormwater sewer systems are not subject to the requirements of this subpart.

(2) Ancillary equipment, which is physically separate from the wastewater system and does not come in contact with or store oily wastewater, is not subject to the requirements of this subpart.

(3) Non-contact cooling water systems are not subject to the requirements of this subpart.

(4) An owner or operator shall demonstrate compliance with the exclusions in paragraphs (d)(1), (2), and (3) of this section as provided in § 60.697 (h), (i), and (j).

### § 60.692-2 Standards: Individual drain systems.

(a)(1) Each drain shall be equipped with water seal controls.

(2) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

(3) Except as provided in paragraph (a)(4) of this section, each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions.

(4) As an alternative to the requirements in paragraph (a)(3) of this section, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed.

(5) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in § 60.692-6.

(b)(1) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(2) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(3) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(4) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in § 60.692-6.

(c)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692-6.

(d) Except as provided in paragraph (e) of this section, each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section.

(e) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin.

### § 60.692-3 Standards: Oil-water separators.

(a) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart shall be equipped and operated with a fixed roof, which meets the following specifications, except as provided in paragraph (d) of this section or in § 60.693-2.

(1) The fixed roof shall be installed to completely cover the separator tank, slop oil tank, storage vessel, or other auxiliary equipment with no separation between the roof and the wall.

(2) The vapor space under a fixed roof shall not be purged unless the vapor is directed to a control device.

(3) If the roof has access doors or openings, such doors or openings shall be gasketed, latched, and kept closed at all times during operation of the separator system, except during inspection and maintenance.

(4) Roof seals, access doors, and other openings shall be checked by visual inspection initially and semiannually thereafter to ensure that no cracks or gaps occur between the roof

and wall and that access doors and other openings are closed and gasketed properly.

(5) When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after it is identified, except as provided in § 60.692-6.

(b) Each oil-water separator tank or auxiliary equipment with a design capacity to treat more than 16 liters per second (250 gpm) of refinery wastewater shall, in addition to the requirements in paragraph (a) of this section, be equipped and operated with a closed vent system and control device, which meet the requirements of § 60.692-5, except as provided in paragraph (c) of this section or in § 60.693-2.

(c)(1) Each modified or reconstructed oil-water separator tank with a maximum design capacity to treat less than 38 liters per second (600 gpm) of refinery wastewater which was equipped and operated with a fixed roof covering the entire separator tank or a portion of the separator tank prior to May 4, 1987 shall be exempt from the requirements of paragraph (b) of this section, but shall meet the requirements of paragraph (a) of this section, or may elect to comply with paragraph (c)(2) of this section.

(2) The owner or operator may elect to comply with the requirements of paragraph (a) of this section for the existing fixed roof covering a portion of the separator tank and comply with the requirements for floating roofs in § 60.693-2 for the remainder of the separator tank.

(d) Storage vessels, including slop oil tanks and other auxiliary tanks that are subject to the requirements of 40 CFR subparts K, Ka, or Kb, are not subject to the requirements of this section.

(e) Slop oil from an oil-water separator tank and oily wastewater from slop oil handling equipment shall be collected, stored, transported, recycled, reused, or disposed of in an enclosed system. Once slop oil is returned to the process unit or is disposed of, it is no longer within the scope of this subpart. Equipment used in handling slop oil shall be equipped with a fixed roof meeting the requirements of paragraph (a) of this section.

(f) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment that is required to comply with paragraph (a) of this section, and not paragraph (b) of this section, may be equipped with a pressure control valve as necessary for proper system operation. The pressure control valve shall be set at the maximum pressure necessary for proper system operation, but such that the value will not vent continuously.

### § 60.692-4 Standards: Aggregate facility.

A new, modified, or reconstructed aggregate facility shall comply with the requirements of §§ 60.692-2 and 60.692-3.

### § 60.692-5 Standards: Closed vent systems and control devices.

(a) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816°C (1,500°F).

(b) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater.

(c) Flares used to comply with this subpart shall comply with the requirements of 40 CFR 60.18.

(d) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(e)(1) Closed vent systems shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined during the initial and semiannual inspections by the methods specified in § 60.696.

(2) Closed vent systems shall be purged to direct vapor to the control device.

(3) A flow indicator shall be installed on a vent stream to a control device to ensure that the vapors are being routed to the device.

(4) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(5) When emissions from a closed system are detected, first efforts at repair to eliminate the emissions shall be made as soon as practicable, but not later than 30 calendar days from the date the emissions are detected, except as provided in § 60.692-6.

### § 60.692-6 Standards: Delay of repair.

(a) Delay of repair of facilities that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial refinery or process unit shutdown.

(b) Repair of such equipment shall occur before the end of the next refinery or process unit shutdown.

### § 60.692-7 Standards: Delay of compliance.

(a) Delay of compliance of modified individual drain systems with ancillary downstream treatment components will be allowed if compliance with the provisions of this subpart cannot be achieved without a refinery or process unit shutdown.

(b) Installation of equipment necessary to comply with the provisions of this subpart shall occur no later than the next scheduled refinery or process unit shutdown.

### § 60.693-1 Alternative standards for individual drain systems.

(a) An owner or operator may elect to construct and operate a completely closed drain system.

(b) Each completely closed drain system shall be equipped and operated with a closed vent system and control device complying with the requirements of § 60.692-5.

(c) An owner or operator must notify the Administrator in the report required in 40 CFR 60.7 that the owner or operator has elected to construct and operate a completely closed drain system.

(d) If an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §§ 60.692-2 or 60.694.

(e)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692-6.

### § 60.693-2 Alternative standards for oil-water separators.

(a) An owner or operator may elect to construct and operate a floating roof on an oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart which meets the following specifications.

(1) Each floating roof shall be equipped with a closure device between the wall of the separator and the roof edge. The closure device is to consist of a primary seal and a secondary seal.

(i) The primary seal shall be a liquid-mounted seal.

(A) A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the separator and the floating roof.

(B) The gap width between the primary seal and the separator wall shall not exceed 3.8 cm (1.5 in.) at any point.

(C) The total gap area between the primary seal and the separator wall shall not exceed 67 cm²/m (3.2 in.²/ft) of separator wall perimeter.

(ii) The secondary seal shall be above the primary seal and cover the annular space between the floating roof and the wall of the separator.

(A) The gap width between the secondary seal and the separator wall shall not exceed 1.3 cm (0.5 in.) at any point.

(B) The total gap area between the secondary seal and the separator wall shall not exceed 6.7 cm²/m (0.32 in.²/ft) of separator wall perimeter.

(iii) The maximum gap width and total gap area shall be determined by the methods and procedures specified in § 60.696(d).

(A) Measurement of primary seal gaps shall be performed within 60 calendar days after initial installation of the floating roof and introduction of refinery wastewater and once every 5 years thereafter.

(B) Measurement of secondary seal gaps shall be performed within 60 calendar days of initial introduction of refinery wastewater and once every year thereafter.

(iv) The owner or operator shall make necessary repairs within 30 calendar days of identification of seals not meeting the requirements listed in paragraphs (a)(1) (i) and (ii) of this section.

(2) Except as provided in paragraph (a)(4) of this section, each opening in the roof shall be equipped with a gasketed cover, seal, or lid, which shall be maintained in a closed position at all times, except during inspection and maintenance.

(3) The roof shall be floating on the liquid (i.e., off the roof supports) at all times except during abnormal conditions (i.e., low flow rate).

(4) The floating roof may be equipped with one or more emergency roof drains for removal of stormwater. Each emergency roof drain shall be fitted with a slotted membrane fabric cover that covers at least 90 percent of the drain opening area or a flexible fabric sleeve seal.

(5)(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions.

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in § 60.692-6.

(b) An owner or operator must notify the Administrator in the report required by 40 CFR 60.7 that the owner or operator has elected to construct and operate a floating roof under paragraph (a) of this section.

(c) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of § 60.692-3(a) shall be installed.

(d) Except as provided in paragraph (c) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §§ 60.692-3 or 60.694 applicable to the same facilities.

### § 60.694 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved by the applicable requirement in § 60.692, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement. The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

### § 60.695 Monitoring of operations.

(a) Each owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator.

(1) Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder shall be used to measure 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 temperature being measured in °C or ±0.5 °C (±1.0 °F), whichever is greater.

(2) Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder shall be used to measure 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 temperature being measured in °C or ±0.5 °C (±1.0 °F), whichever is greater.

(3) Where a carbon adsorber is used for VOC emissions reduction, a monitoring device that continuously indicates and records the VOC concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(4) Where a flare is used for VOC emission reduction, the owner or operator shall comply with the monitoring requirements of 40 CFR 60.18(f)(2).

(b) Where a VOC recovery device other than a carbon adsorber is used to meet the requirements specified in § 60.692-5(a), the owner or operator shall provide to the Administrator information describing the operation of the control device and the process parameter(s) that would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

(c) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

### § 60.696 Performance test methods and procedures and compliance provisions.

(a) Before using any equipment installed in compliance with the requirements of §§ 60.692-2, 60.692-3, 60.692-4, 60.692-5, or 60.693, the owner or operator shall inspect such equipment for indications of potential emissions, defects, or other problems that may cause the requirements of this subpart not to be met. Points of inspection shall include, but are not limited to, seals, flanges, joints, gaskets, hatches, caps, and plugs.

(b) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.692-5 (other than a flare) is exempt from § 60.8 of the General Provisions and shall use Method 21 to measure the emission concentrations, using 500 ppm as the no detectable emission limit. The instrument shall be calibrated each day before using. The calibration gases shall be:

(1) Zero air (less than 10 ppm of hydrocarbon in air), and

(2) A mixture of either methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall conduct a performance test initially, and at other times as requested by the Administrator, using the test methods and procedures in § 60.18(f) to determine compliance of flares.

(d) After installing the control equipment required to meet § 60.693-2(a) or whenever sources that have ceased to treat refinery wastewater for a period of 1 year or more are placed back into service, the owner or operator shall determine compliance with the standards in § 60.693-2(a) as follows:

(1) The maximum gap widths and maximum gap areas between the primary seal and the separator wall and between the secondary seal and the separator wall shall be determined individually within 60 calendar days of the initial installation of the floating roof and introduction of refinery wastewater or 60 calendar days after the equipment is placed back into service using the following procedure

when the separator is filled to the design operating level and when the roof is floating off the roof supports.

(i) Measure seal gaps around the entire perimeter of the separator in each place where a 0.32 cm (0.125 in.) diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the separator and measure the gap width and perimetrical distance of each such location.

(ii) The total surface area of each gap described in (d)(1)(i) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the wall to the seal and multiplying each such width by its respective perimetrical distance.

(iii) Add the gap surface area of each gap location for the primary seal and the secondary seal individually, divide the sum for each seal by the nominal perimeter of the separator basin and compare each to the maximum gap area as specified in § 60.693-2.

(2) The gap widths and total gap area shall be determined using the procedure in paragraph (d)(1) of this section according to the following frequency:

(i) For primary seals, once every 5 years.

(ii) For secondary seals, once every year.

## § 60.697 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. All records shall be retained for a period of 2 years after being recorded unless otherwise noted.

(b)(1) For individual drain systems subject to § 60.692-2, the location, date, and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plug is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

(2) For junction boxes subject to § 60.692-2, the location, date, and corrective action shall be recorded for inspections required by § 60.692-2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

(3) For sewer lines subject to §§ 60.692-2 and 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by §§ 60.692-2(c) and 60.693-1(e) when a problem is identified that could result in VOC emissions.

(c) For oil-water separators subject to § 60.692-3, the location, date, and corrective action shall be recorded for inspections required by by § 60.692-3(a) when a problem is identified that could result in VOC emissions.

(d) For closed vent systems subject to § 60.692-5 and completely closed drain systems subject to § 60.693-1, the location, date, and corrective action shall be recorded for inspections required by § 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions.

(e)(1) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded.

(2) The reason for the delay as specified in § 60.692-6 shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time.

(3) The signature of the owner or operator (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded.

(4) The date of successful repair or corrective action shall be recorded.

(f)(1) A copy of the design specifications for all equipment used to comply with the provisions of this subpart shall be kept for the life of the source in a readily accessible location.

(2) The following information pertaining to the design specifications shall be kept.

(i) Detailed schematics, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(3) The following information pertaining to the operation and maintenance of closed drain systems and closed vent systems shall be kept in a readily accessible location.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions shall be kept for the life of the facility. This documentation is to include a general description of the gas streams that enter the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816°C (1,500°F) is used to meet the 95-percent requirement, documentation that those conditions exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters) shall be kept for the life of the facility.

(iii) Periods when the closed vent systems and control devices required in § 60.692 are not operated as designed, including periods when a flare pilot does not have a flame shall be recorded and kept for 2 years after the information is recorded.

(iv) Dates of startup and shutdown of the closed vent system and control devices required in § 60.692 shall be recorded and kept for 2 years after the information is recorded.

(v) The dates of each measurement of detectable emissions required in §§ 60.692, 60.693, or 60.692-5 shall be recorded and kept for 2 years after the information is recorded.

(vi) The background level measured during each detectable emissions measurement shall be recorded and kept for 2 years after the information is recorded.

(vii) The maximum instrument reading measured during each detectable emission measurement shall be recorded and kept for 2 years after the information is recorded.

(viii) Each owner or operator of an affected facility that uses a thermal incinerator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28°C (50°F) below the design combustion zone temperature, and shall keep such records for 2 years after the information is recorded.

(ix) Each owner or operator of an affected facility that uses a catalytic incinerator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation during which the average temperature measured before the catalyst bed is more than 28°C (50°F) below the design gas stream temperature, and records of all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80 percent of the design temperature difference, and shall keep such records for 2 years after the information is recorded.

(x) Each owner or operator of an affected facility that uses a carbon adsorber shall maintain continuous records of the VOC concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(g) If an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of active service, the owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains.

(h) For stormwater sewer systems subject to the exclusion in § 60.692-1(d)(1), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that no wastewater from any process units or equipment is directly discharged to the stormwater sewer system.

(i) For ancillary equipment subject to the exclusion in § 60.692-1(d)(2), an owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which demonsrate that the ancillary equipment does not come in contact with or store oily wastewater.

(j) For non-contact cooling water systems subject to the exclusion in § 60.692-1(d)(3), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that the cooling water does not contact hydrocarbons or oily wastewater and is not recirculated through a cooling tower.

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### § 60.698 Reporting requirements.

(a) An owner or operator electing to comply with the provisions of § 60.693 shall notify the Administrator of the alternative standard selected in the report required in § 60.7.

(b)(1) Each owner or operator of a facility subject to this subpart shall submit to the Administrator within 60 days after initial startup a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests of process drains, sewer lines, junction boxes, oil-water separators, and closed vent systems and control devices have been carried out in accordance with these standards. Thereafter, the owner or operator shall submit to the Administrator semiannually a certification that all of the required inspections have been carried out in accordance with these standards.

(2) Each owner or operator of an affected facility that uses a flare shall submit to the Administrator within 60 days after initial startup, as required under § 60.8(a), a report of the results of the performance test required in § 60.696(c).

(c) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted initially and semiannually thereafter to the Administrator.

(d) As applicable, a report shall be submitted semiannually to the Administrator that indicates:

(1) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature,

(2) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference, or,

(3) Each 3-hour period of operation during which the average VOC concentration level or reading of organics in the exhaust gases from a carbon adsorber is more than 20 percent greater than the design exhaust gas concentration level or reading.

(e) If compliance with the provisions of this subpart is delayed pursuant to § 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown.

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### § 60.699 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

## Subpart RRR—[Reserved]

## Subpart SSS—Standards of Performance for Magnetic Tape Coating Facilities

SOURCE: 53 FR 38914, Oct. 3, 1988, unless otherwise noted.

### § 60.710 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each coating operation; and

(2) Each piece of coating mix preparation equipment.

(b) Any new coating operation that utilizes less than 38 $m^3$ of solvent or any modified or reconstructed coating operation that utilizes less than 370 $m^3$ of solvent for the manufacture of magnetic tape per calendar year is subject only to the requirements of §§ 60.714(a), 60.717(b), and 60.717(c). If the amount of solvent utilized for the manufacture of magnetic tape equals or exceeds these amounts in any calendar year, the facility is subject to § 60.712 and all other sections of this subpart. Once a facility has become subject to § 60.712 and all other sections of this subpart, it will remain subject to those requirements regardless of changes in annual solvent utilization.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 22, 1986.

### § 60.711 Definitions, symbols, and cross reference tables.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

(1) *Base film* means the substrate that is coated to produce magnetic tape.

(2) *Capture system* means any device or combination of devices that contains or collects an airborne pollutant and directs it into a duct.

(3) *Coating applicator* means any apparatus used to apply a coating to a continuous base film.

(4) *Coating mix preparation equipment* means all mills, mixers, holding tanks, polishing tanks, and other equipment used in the preparation of the magnetic coating formulation but does not include those mills that do not emit VOC because they are closed, sealed, and operated under pressure.

(5) *Coating operation* means any coating applicator, flashoff area, and drying oven located between a base film unwind station and a base film rewind station that coat a continuous base film to produce magnetic tape.

(6) *Common emission control device* means a control device controlling emissions from the coating operation as well as from another emission source within the plant.

(7) *Concurrent* means construction of a control device is commenced or completed within the period beginning 6 months prior to the date construction of affected coating mix preparation equipment commences and ending 2 years after the date construction of affected coating mix preparation equipment is completed.

(8) *Control device* means any apparatus that reduces the quantity of a pollutant emitted to the air.

(9) *Cover* means, with respect to coating mix preparation equipment, a device that lies over the equipment opening to prevent VOC from escaping and that meets the requirements found in § 60.712(c)(1)-(5).

(10) *Drying oven* means a chamber in which heat is used to bake, cure, polymerize, or dry a surface coating.

readily accessible location, plans or specifications which demonstrate that no wastewater from any process units or equipment is directly discharged to the stormwater sewer system.

(i) For ancillary equipment subject to the exclusion in § 60.692-1(d)(2), an owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which demonsrate that the ancillary equipment does not come in contact with or store oily wastewater.

(j) For non-contact cooling water systems subject to the exclusion in § 60.692-1(d)(3), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that the cooling water does not contact hydrocarbons or oily wastewater and is not recirculated through a cooling tower.

(Approved by the Office of Management and Budget under control number 2060-0172)

### § 60.698 Reporting requirements.

(a) An owner or operator electing to comply with the provisions of § 60.693 shall notify the Administrator of the alternative standard selected in the report required in § 60.7.

(b)(1) Each owner or operator of a facility subject to this subpart shall submit to the Administrator within 60 days after initial startup a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests of process drains, sewer lines, junction boxes, oil-water separators, and closed vent systems and control devices have been carried out in accordance with these standards. Thereafter, the owner or operator shall submit to the Administrator semiannually a certification that all of the required inspections have been carried out in accordance with these standards.

(2) Each owner or operator of an affected facility that uses a flare shall submit to the Administrator within 60 days after initial startup, as required under § 60.8(a), a report of the results of the performance test required in § 60.696(c).

(c) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted initially and semiannually thereafter to the Administrator.

(d) As applicable, a report shall be submitted semiannually to the Administrator that indicates:

(1) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature,

(2) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference, or,

(3) Each 3-hour period of operation during which the average VOC concentration level or reading of organics in the exhaust gases from a carbon adsorber is more than 20 percent greater than the design exhaust gas concentration level or reading.

(e) If compliance with the provisions of this subpart is delayed pursuant to § 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown.

(Approved by the Office of Management and Budget under control number 2060-0172)

### § 60.699 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

## Subpart RRR—[Reserved]

## Subpart SSS—Standards of Performance for Magnetic Tape Coating Facilities

SOURCE: 53 FR 38914, Oct. 3, 1988, unless otherwise noted.

### § 60.710 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each coating operation; and

(2) Each piece of coating mix preparation equipment.

(b) Any new coating operation that utilizes less than 38 $m^3$ of solvent or any modified or reconstructed coating operation that utilizes less than 370 $m^3$ of solvent for the manufacture of magnetic tape per calendar year is subject only to the requirements of §§ 60.714(a), 60.717(b), and 60.717(c). If the amount of solvent utilized for the manufacture of magnetic tape equals or exceeds these amounts in any calendar year, the facility is subject to § 60.712 and all other sections of this subpart. Once a facility has become subject to § 60.712 and all other sections of this subpart, it will remain subject to those requirements regardless of changes in annual solvent utilization.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 22, 1986.

### § 60.711 Definitions, symbols, and cross reference tables.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

(1) *Base film* means the substrate that is coated to produce magnetic tape.

(2) *Capture system* means any device or combination of devices that contains or collects an airborne pollutant and directs it into a duct.

(3) *Coating applicator* means any apparatus used to apply a coating to a continuous base film.

(4) *Coating mix preparation equipment* means all mills, mixers, holding tanks, polishing tanks, and other equipment used in the preparation of the magnetic coating formulation but does not include those mills that do not emit VOC because they are closed, sealed, and operated under pressure.

(5) *Coating operation* means any coating applicator, flashoff area, and drying oven located between a base film unwind station and a base film rewind station that coat a continuous base film to produce magnetic tape.

(6) *Common emission control device* means a control device controlling emissions from the coating operation as well as from another emission source within the plant.

(7) *Concurrent* means construction of a control device is commenced or completed within the period beginning 6 months prior to the date construction of affected coating mix preparation equipment commences and ending 2 years after the date construction of affected coating mix preparation equipment is completed.

(8) *Control device* means any apparatus that reduces the quantity of a pollutant emitted to the air.

(9) *Cover* means, with respect to coating mix preparation equipment, a device that lies over the equipment opening to prevent VOC from escaping and that meets the requirements found in § 60.712(c)(1)-(5).

(10) *Drying oven* means a chamber in which heat is used to bake, cure, polymerize, or dry a surface coating.

(11) *Equivalent diameter* means four times the area of an opening divided by its perimeter.

(12) *Flashoff area* means the portion of a coating operation between the coating applicator and the drying oven where solvent begins to evaporate from the coated base film.

(13) *Magnetic tape* means any flexible substrate that is covered on one or both sides with a coating containing magnetic particles and that is used for audio or video recording or information storage.

(14) *Natural draft opening* means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft across such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

(15) *Nominal 1-month period* means a calendar month or, if established prior to the performance test in a statement submitted with notification of anticipated startup pursuant to 40 CFR 60.7(a)(2), a similar monthly time period (e.g., 30-day month or accounting month).

(16) *Temporary enclosure* means a total enclosure that is constructed for the sole purpose of measuring the fugitive emissions from an affected facility. A temporary enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent capture system. A temporary enclosure will be assumed to achieve total capture of fugitive VOC emissions if it conforms to the requirements found in § 60.713(b)(5)(i) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

(17) *Total enclosure* means a structure that is constructed around a source of emissions so that all VOC emissions are collected and exhausted through a stack or duct. With a total enclosure, there will be no fugitive emissions, only stack emissions. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but, if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. A permanent enclosure that meets the requirements found in § 60.713(b)(5)(i) is assumed to be a total enclosure. The owner or operator of a permanent enclosure that does not meet the requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. Such approval shall be granted upon a demonstration to the satisfaction of the Administrator that all VOC emissions are contained and vented to the control device.

(18) *Utilize* refers to the use of solvent that is delivered to coating mix preparation equipment for the purpose of formulating coatings to be applied on an affected coating operation and any other solvent (e.g., dilution solvent) that is added at any point in the manufacturing process.

(19) *VOC content of the coating applied* means the product of Method 24 VOC analyses or formulation data (if the data are demonstrated to be equivalent to Method 24 results) and the total volume of coating fed to the coating applicator. This quantity is intended to include all VOC that actually are emitted from the coating operation in the gaseous phase. Thus, for purposes of the liquid-liquid VOC material balance in § 60.713(b)(1), any VOC (including dilution solvent) added to the coatings must be accounted for, and any VOC contained in waste coatings or retained in the final product may be measured and subtracted from the total. (These adjustments are not necessary for the gaseous emission test compliance provisions of § 60.713(b).)

(20) *Volatile Organic Compounds* or *VOC* means any organic compounds that participate in atmospheric photochemical reactions or that are measured by Method 18, 24, 25, or 25A or an equivalent or alternative method as defined in 40 CFR 60.2.

(b) The nomenclature used in this subpart has the following meaning:

(1) $A_k$=the area of each natural draft opening (k) in a total enclosure, in square meters.

(2) $C_{aj}$=the concentration of VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3) $C_{bi}$=the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4) $C_{di}$=the concentration of VOC in each gas stream (i) entering the emission control device from the affected coating operation, in parts per million by volume.

(5) $C_{fk}$=the concentration of VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in parts per million by volume.

(6) $C_{gv}$=the concentration of VOC in the gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For the purposes of calculating the efficiency of the individual adsorber vessel, $C_{gv}$ may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts.

(7) $C_{hv}$=the concentration of VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8) E=the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9) F=the VOC emission capture efficiency of the VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10) FV=the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11) G=the calculated weighted average mass of VOC per volume of coating solids (in kilograms per liter) applied each nominal 1-month period.

(12) $H_v$=the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(13) $H_{sys}$=the carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

(14) $L_{si}$=the volume fraction of solids in each coating (i) applied during a nominal 1-month period as determined from the facility's formulation records.

(15) $M_{ci}$=the total mass in kilograms of each coating (i) applied at an affected coating operation during a nominal 1-month period as determined from facility records. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the mass of the coating has been determined.

(16) $M_r$=the total mass in kilograms of VOC recovered for a nominal 1-month period.

(17) $Q_{aj}$=the volumetric flow rate of each gas stream (j) exiting the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(18) $Q_{bi}$=the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(19) $Q_{di}$=the volumetric flow rate of each gas stream (i) entering the emission control device from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(20) $Q_{fk}$=the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(21) $Q_{gv}$=the volumetric flow rate of the gas stream entering each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration. For purposes of calculating the efficiency of the individual adsorber vessel, the value of $Q_{gv}$ can be assumed to equal the value of $Q_{hv}$ measured for that adsorber vessel.

(22) $Q_{hv}$=the volumetric flow rate of the gas stream exiting each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(23) $Q_{in\ i}$=the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct, in standard cubic meters per hour (wet basis).

(24) $Q_{out\ j}$=the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood, in standard cubic meters per hour (wet basis).

(25) R=the overall VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(26) $RS_i$=the total mass (kg) of VOC retained in the coated base film after oven drying for a given magnetic tape product.

(27) $V_{ci}$=the total volume in liters of each coating (i) applied during a nominal 1-month period as determined from facility records.

(28) $W_{oi}$=the weight fraction of VOC in each coating (i) applied at an affected coating operation during a nominal 1-month period as determined by Method 24. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the weight fraction of VOC in the coating has been determined.

(c) Tables 1a and 1b present a cross reference of the affected facility status and the relevant section(s) of the regulation.

TABLE 1A—CROSS REFERENCE[a] [b]

| Status | Standard[c] | Compliance provisions[d]—§ 60.713 |
|---|---|---|
| A. Coating operation alone: | | |
| New | § 60.712(a). Recover or destroy at least 93 percent of the VOC applied | (b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d) |
| Modified or reconstructed: | | |
| 1. If at least 90 percent of the VOC applied is recovered or destroyed prior to modification/reconstruction. | § 60.712(b)(1): (i) Maintain demonstrated level of VOC control or 93 percent, whichever is lower.<br>(ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient, a demonstration must be made that the overall level of VOC control is at least as high as required with the old control device (90 to 93 percent) and, if the demonstrated level is higher than the old level, maintain the higher level of control (up to 93 percent). | (a)(1), (a)(3), (b)(1), (b)(2), (b)(3), (b)(4), (c), (d) |
| 2. If existing coating operation has a total enclosure vented to a control device that is at least 92 percent efficient. | § 60.712(b)(2): (i) Continue to vent all VOC emissions to the control device and maintain control efficiency at or above the demonstrated level or 95 percent, whichever is lower.<br>(ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient and all VOC emissions must be vented from the total enclosure to the new control device. | (a)(2), (b)(5), (c), (d) |
| 3. If existing coating operation is not in the previous two categories. | § 60.712(b)(3): Recover or destroy at least 93 percent of the VOC applied | (b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d) |
| B. Coating mix preparation equipment alone: | | |
| New: | | |
| 1. With concurrent construction of new VOC control device (other than a condenser) on the coating operation. | § 60.712(c): Install and use covers and vent to a control device that is at least 95 percent efficient[e]. | (b)(6) |
| 2. Without concurrent construction of new VOC control device on the coating operation *or* with concurrent construction of a condenser. | § 60.712 (d)(1) *or* (d)(2): Install and use covers and vent to a control device *or* install and use covers[e]. | (b)(7), (b)(8) |
| Modified or reconstructed | § 60.712 (d)(1) *or* (d)(2): Install and use covers and vent to a control device *or* install and use covers[e]. | (b)(7), (b)(8) |
| C. Both coating operation and coating mix preparation equipment: New and modified or reconstructed. | § 60.712(e): In lieu of standards in § 60.712(a)-(d), use coatings containing a maximum of 0.20 kg VOC per liter of coating solids. | (b)(9) |

[a] This table is presented for the convenience of the user and is not intended to supercede the language of the regulation. For the details of the requirements, refer to the text of the regulation.

[b] Refer to Part B to determine which subsections of §§ 60.714, 60.715, and 60.717 correspond to each compliance provision (§ 60.713).

[c] As per § 60.710(b), any new coating operation with solvent utilization < 38 m³/yr or any modified or reconstructed coating operation with solvent utilization < 370 m³/yr is exempt from the VOC standards (§ 60.712). Such coating operations are subject only to §§ 60.714(a), 60.717(b), and 60.717(c). However, should a coating operation once exceed the applicable annual solvent utilization cutoff, that coating operation shall be subject to the VOC standards (§ 60.712) and all other sections of the subpart. Once this has occurred, the coating operation shall remain subject to those requirements regardless of changes in annual solvent utilization.

[d] As applicable.

[e] Section 60.716 permits the use of an alternative means of VOC emission limitation that achieves an equivalent or greater VOC emission reduction.

### TABLE 1B—CROSS REFERENCE

| Compliance provisions [a]—§ 60.713 | Test methods—§ 60.715 | Category/equipment [b] | Installation of monitoring devices and recordkeeping—§ 60.714 | Reporting and monitoring requirements [c]—§ 60.717 |
|---|---|---|---|---|
| A. Coating operation alone: | | | | |
| (b)(1)—When emissions from only the affected coating operation are controlled by a solvent recovery device, perform a liquid-liquid VOC material balance. | (a) | | (b), (i) (k) | (a), (d)(1), (e), (h), (i) |
| (b)(2)—When emissions from only the affected coating operation are controlled by an incinerator or when a common emission control device (other than a carbon adsorption system with individual exhaust stacks for each adsorber vessel) is used to control emissions from an affected coating operation as well as from other sources of VOC, perform a gaseous emission test. | (b)-(g) | General | (i), (k) | (a), (e), (h), (i) |
| | | CA | (c) | (d)(3), (d)(4) |
| | | CO | (d) | (d)(5) |
| | | TI | (e) | (d)(6) |
| | | CI | (f) | (d)(7) |
| | | PE, TE | (g) | (d)(8) |
| (b)(3)—When emissions from both the affected coating operation and from other sources of VOC are controlled by a carbon adsorption system with individual exhaust stacks for each adsorber vessel, perform a gaseous emission test. | (b)-(g) | General | (i), (k) | (a), (e), (h), (i) |
| | | CA | (c) | (d)(3), (d)(4) |
| | | PE, TE | (g) | (d)(8) |
| (b)(4)—When emissions from more than one affected coating operation are vented through the same duct to a control device also controlling emissions from nonaffected sources that are vented separately from the affected coating operations, consider the combined affected coating operations as a single emission source and conduct a compliance test described in § 60.713(b)(2) or (3). | (b)-(g) | General | (i), (k) | (a), (e), (h), (i) |
| | | CA | (c) | (d)(3), (d)(4) |
| | | CO | (d) | (d)(5) |
| | | TI | (e) | (d)(6) |
| | | CI | (f) | (d)(7) |
| | | PE, TE | (g) | (d)(8) |
| (b)(5)—Alternative to § 60.713(b)(1)-(4): Demonstrate that a total enclosure is installed around the coating operation and that all VOC emissions are vented to a control device with the specified efficiency. | (b)-(g) | General | (i), (k) | (a), (e) (h), (i) |
| | | CA | (c) | (d)(3), (d)(4) |
| | | CO | (d) | (d)(5) |
| | | TI | (e) | (d)(6) |
| | | CI | (f) | (d)(7) |
| | | TE | (h) | (d)(8) |
| B. Coating mix preparation equipment alone: | | | | |
| (b)(6)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)-(5) are installed and used properly; procedures detailing the proper use of covers are posted, the mix equipment is vented to a control device; and the control device efficiency is greater than or equal to 95 percent. | (b)-(g) | General | (k) | (a), (e), (h), (i) |
| | | CA | (c) | (d)(3), (d)(4) |
| | | TI | (e) | (d)(6) |
| | | CI | (f) | (d)(7) |
| (b)(7)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)-(5) are installed and used properly; procedures detailing the proper use of covers are posted; and the mix equipment is vented to a control device. | | | | |
| (b)(8)—Demonstrate that covers meeting the requirement of § 60.712(c)(1)-(5) are installed and used properly and that procedures detailing the proper use of the covers are posted. | | | | |
| C. Both coating operation and coating mix preparation equipment, (b)(9)—Determine that weighted average mass of VOC in the coating per volume of coating solids applied for each month. | (a) | | (i), (j) (k) | (d)(2), (e), (g), (h), (i) |

[a] Section 60.713(a) specifies the procedures to be used prior to modification/reconstruction to establish the applicability of the VOC standards in § 60.712(b)(1) and (2) for modified/reconstructed coating operations. Section 60.713(a)(1) requires the use of the procedures of § 60.713(b)(1), (2), (3), or (4) to demonstrate prior to modification/reconstruction that 90 percent of the applied VOC is recovered or destroyed. Section 60.713(a)(2) requires the use of procedures of §60.713(b)(5) to demonstrate prior to modification/reconstruction that the coating operation has a total enclosure vented to a control device that is at least 92 percent efficient. Sections 60.713(c) and (d) do not have corresponding test methods, monitoring, reporting, or recordkeeping requirements.

[b] TI = thermal incinerator; CI = catalytic incinerator; CA = carbon adsorber; CO = condensor; PE = partial enclosure; TE = total enclosure.

[c] See § 60.717(f) for additional reporting requirements when coating mix preparation equipment is constructed at a time when no coating operation is being constructed. See § 60.717(g) for addition reporting requirements when coating mix preparation equipment is constructed at the same time as an affected coating operation.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988; 53 FR 49822, Dec. 9, 1988]

### § 60.712 Standards for volatile organic compounds.

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever date comes first.

(a) Each owner or operator shall control emissions from a new coating operation by recovering or destroying at least 93 percent of the VOC content of the coating applied at the coating applicator.

(b) Each owner or operator of a modified or reconstructed coating operation shall meet the appropriate standard set out in (b)(1), (2), or (3) of this section.

(1) For coating operations demonstrated prior to modification or reconstruction pursuant to § 60.713(a)(1) to have emissions controlled by the recovery or destruction of at least 90 percent of the VOC content of the coating applied at the coating applicator.

(i) Subject to the provisions of (b)(1)(ii) of this section, each owner or operator shall continue to control emissions from the coating operation to at least the demonstrated level or 93 percent, whichever is lower.

(ii) If the VOC control device in use during the emission reduction demonstration made pursuant to § 60.713(a)(1) is subsequently replaced, each owner or operator shall:

(A) Install a control device that is at least 95 percent efficient; and

(B) Control emissions from the coating operation to at least the level determined pursuant to § 60.713(a)(3)(ii).

(2) For coating operations demonstrated prior to modification or reconstruction pursuant to § 60.713(a)(2) to have a total enclosure installed around the coating operation and all VOC emissions ventilated to a control device that is at least 92 percent efficient.

(i) Subject to the provisions of (b)(2)(ii) of this section, each owner or operator shall continue to ventilate all VOC emissions from the total enclosure to the control device and maintain control device efficiency at or above the demonstrated level or 95 percent, whichever is lower.

(ii) If the VOC control device in use during the control device efficiency demonstration made pursuant to § 60.713(a)(2) is subsequently replaced, each owner or operator shall install a VOC control device that is at least 95 percent efficient and ventilate all VOC emissions from the total enclosure to the control device.

(3) For coating operations not subject to paragraph (b)(1) or (2) of this section, each owner or operator shall control emissions from the coating operation by recovering or destroying at least 93 percent of the VOC content of the coating applied at the coating applicator.

(c) Each owner or operator constructing new coating mix preparation equipment with concurrent construction of a new VOC control device (other than a condenser) on a magnetic tape coating operation shall control emissions from the coating mix preparation equipment by installing and using a cover on each piece of equipment and venting the equipment to a 95 percent efficient control device. Each cover shall meet the following specifications:

(1) Cover shall be closed at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with cover in place. Such activities shall be carried out through ports of the minimum practical size.

(2) Cover shall extend at least 2 cm beyond the outer rim of the opening or shall be attached to the rim;

(3) Cover shall be of such design and construction that contact is maintained between cover and rim along the entire perimeter;

(4) Any breach in the cover (such as an opening for insertion of a mixer shaft or port for addition of ingredients) shall be covered consistent with (c)(2) and (3) of this section when not actively in use. An opening sufficient to allow safe clearance for a mixer shaft is acceptable during those periods when the shaft is in place; and

(5) A polyethylene or nonpermanent cover may be used provided it meets the requirements of (c)(2), (3), and (4) of this section. Such a cover shall not be reused after once being removed.

(d) Each owner or operator of affected coating mix preparation equipment not subject to § 60.712(c) shall control emissions from the coating mix preparation equipment by either:

(1) Installing and using a cover that meets the specifications in paragraphs (c)(1)-(5) of this section and venting VOC emissions from the equipment to a VOC control device; or

(2) Installing and using a cover that meets the specifications in paragraphs (c)(1)-(5) of this section.

(e) In lieu of complying with § 60.712(a) through (d), each owner or operator may use coatings that contain a maximum of 0.20 kg of VOC per liter of coating solids as calculated on a weighted average basis for each nominal 1-month period.

### § 60.713 Compliance provisions.

(a) Applicability of § 60.712(b)(1) and (2) (standards for modified or reconstructed coating operations) and determination of control level required in § 60.712(b)(1)(ii)(B).

(1) To establish applicability of § 60.712(b)(1), each owner or operator must demonstrate, prior to modification or reconstruction, that at least 90 percent of the VOC content of the coating applied at the coating applicator is recovered or destroyed. Such demonstration shall be made using the procedures of paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section, as appropriate.

(2) To establish applicability of § 60.712(b)(2), each owner or operator must demonstrate, prior to modification or reconstruction, that a total enclosure is installed around the existing coating operation and that all VOC emissions are ventilated to a control device that is at least 92 percent efficient. Such demonstration shall be made using the procedures of § 60.713(b)(5).

(3) To determine the level of control required in § 60.712(b)(1)(ii)(B), the owner or operator must demonstrate:

(i) That the VOC control device subsequently installed is at least 95 percent efficient. Such demonstration shall be made using Equation (2) specified in paragraph (b)(2)(iv) of this section or Equations (4) and (5) specified in paragraphs (b)(3)(iv) and (v) of this section, as applicable, and the test methods and procedures specified in § 60.715(b)-(g); and

(ii) That the overall level of control after the VOC control device is installed is at least as high as the level demonstrated prior to modification or reconstruction pursuant to paragraph (a)(1) of this section. Such demonstrations shall be made using the procedures of paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section, as appropriate. The required overall level of control subsequent to this demonstration shall be the level so demonstrated or 93 percent, whichever is lower.

(b) Compliance demonstrations for § 60.712(a), (b)(1), (b)(2), (b)(3), (c), (d), and (e).

(1) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when emissions from only the affected coating operations are controlled by a dedicated solvent recovery device, each owner or operator of the affected coating operation shall perform a liquid-liquid VOC material balance over each and every nominal 1-month period. When demonstrating compliance by this procedure, § 60.8(f) of the General Provisions does not apply. The amount of liquid VOC applied and recovered shall be determined as discussed in paragraph (b)(1)(iii) of this section. The overall VOC emission reduction (R) is calculated using the following equation:

$$R = \frac{M_r}{\sum_{i=1}^{n} [W_{oi} M_{ci} - RS_i]} \times 100$$

(Equation 1)

(i) The value of $RS_i$ is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of $RS_i$ that is greater than zero:

(A) Measurement techniques; and

(B) Documentation that the measured value of $RS_i$ exceeds zero.

(ii) The measurement techniques of paragraph (b)(1)(i)(A) of this section shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions.

(iii) Each owner or operator demonstrating compliance by the test method described in paragraph (b)(1) of this section shall:

(A) Measure the amount of coating applied at the coating applicator;

(B) Determine the VOC content of all coatings applied using the test method specified in § 60.715(a);

(C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of VOC recovered by the solvent recovery device over each nominal 1-month period. The device shall be certified by the manufacturer to be accurate to within ±2.0 percent;

(D) Measure the amount of VOC recovered; and

(E) Calculate the overall VOC emission reduction (R) for each and every nominal 1-month period using Equation 1.

(iv) For facilities subject to § 60.712 (a) or (b)(3), compliance is demonstrated if the value of R is equal to or greater than 93 percent.

(v) Subject to the provisions of (b)(1)(vi) of this section, for facilities subject to § 60.712(b)(1), compliance is demonstrated if the value of R is equal to or greater than the percent reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 93 percent whichever is lower.

(vi) For facilities subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of E (control device efficiency) is greater than or equal to 0.95 and if the value of R is equal to or greater than the percent reduction demonstrated pursuant to § 60.713(a)(3) or 93 percent, whichever is lower.

(2) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when the emissions from only an affected coating operation are controlled by a dedicated incinerator or when a common emission control device (other than a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel) is used to control emissions from an affected coating operation as well as from other sources of VOC, each owner or operator of an affected coating operation shall perform a gaseous emission test using the following procedures:

(i) Construct the overall VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.715(b) through (g);

(ii) Determine capture efficiency from the coating operation by capturing, venting, and measuring all VOC emissions from the operation. During a performance test, the owner or operator of an affected coating operation located in an area with other sources of VOC shall isolate the coating operation emissions from all other sources of VOC by one of the following methods:

(A) Build a temporary enclosure (see § 60.711(a)(16)) around the affected coating operation; or

(B) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected coating operation through any building ventilation system and other room exhausts such as drying ovens. All ventilation air must be vented through stacks suitable for testing;

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency (E) of the control device using the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{p} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi}} \qquad \text{(Equation 2)}$$

(v) Determine the efficiency (F) of the VOC capture system using the following equation:

$$F = \frac{\sum_{i=1}^{n} Q_{di}C_{di}}{\sum_{i=1}^{n} Q_{di}C_{di} + \sum_{k=1}^{p} Q_{fk}C_{fk}} \qquad \text{(Equation 3)}$$

(vi) For each affected coating operation subject to § 60.712(a) or (b)(3), compliance is demonstrated if the product of (E)×(F) is equal to or greater than 0.93.

(vii) For each affected coating operation subject to § 60.712(b)(1)(i), compliance is demonstrated if the product of (E)×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 0.93, whichever is lower.

(viii) For each affected coating operation subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of E is greater than or equal to 0.95 and if the product of (E)×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(3) or 0.93, whichever is lower.

(3) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel is used to control emissions from an affected coating operation as well as from other sources of VOC, each owner or operator of an affected coating operation shall perform a gaseous emission test using the following procedures:

(i) Construct the overall VOC emission reduction system so that each volumetric flow rate and the total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.715(b) through (g);

(ii) Assure that all VOC emissions from the coating operation are segregated from other VOC sources and that the emissions can be captured for measurement, as described in § 60.713(b)(2)(ii)(A) and (B);

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency ($H_v$) of each individual adsorber vessel (v) using the following equation:

$$H_v = \frac{Q_{gv}C_{gv} - Q_{hv}C_{hv}}{Q_{gv}C_{gv}} \qquad \text{(Equation 4)}$$

(v) Determine the efficiency of the carbon adsorption system ($H_{sys}$) by computing the average efficiency of the adsorber vessels as weighted by the volumetric flow rate ($Q_{hv}$) of each individual adsorber vessel (v) using the following equation:

$$H_{sys} = \frac{\sum_{v=1}^{q} H_v Q_{hv}}{\sum_{v=1}^{q} Q_{hv}} \qquad \text{(Equation 5)}$$

(vi) Determine the efficiency (F) of the VOC capture system using Equation (3).

(vii) For the affected coating operation subject to § 60.712(a) or (b)(3), compliance is demonstrated if the product of ($H_{sys}$)×(F) is equal to or greater than 0.93.

(viii) For the affected coating operation subject to § 60.712(b)(1)(i), compliance is demonstrated if the product of ($H_{sys}$)×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 0.93, whichever is lower.

(ix) For each affected coating operation subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of $H_{sys}$ is greater than or equal to 0.95 and if the product of $(H_{sys})\times(F)$ is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(3) or 0.93, whichever is lower.

(4) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when the VOC emissions from more than one affected coating operation are collected by a common capture system and are vented through a common duct to a control device that is also controlling emissions from nonaffected sources and the emissions from the nonaffected sources are vented separately from the affected coating operations, the owner or operator may:

(i) Consider the combined affected coating operations as a single emission source; and

(ii) Conduct a compliance test on this single source by the methods described in § 60.713(b)(2) or (3), as applicable.

(5) An alternative method of demonstrating compliance with § 60.712(a) or (b)(3) (standards for coating operations) and the sole method of demonstrating compliance with § 60.712(b)(2) (standards for modified or reconstructed coating operations) is the installation of a total enclosure around the coating operation and the ventilation of all VOC emissions from the total enclosure to a control device with the efficiency specified in paragraph (b)(5)(iii)(A) or (B) of this section, as applicable. If this method is selected, the compliance test methods described in paragraphs (b)(1), (b)(2), (b)(3), and (b)(4) of this section are not required. Instead, each owner or operator of an affected coating operation shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs (b)(5)(i)(A) through (D) of this section shall be assumed to be a total enclosure. The owner or operator of an enclosed coating operation that does not meet the requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all VOC emissions from the affected coating operation are contained and vented to the control device. The requirements for automatic approval are as follows:

(A) Total area of all natural draft openings shall not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(B) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening;

(C) Average inward face velocity across all natural draft openings (FV) shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(*1*) Construct all forced makeup air ducts and all exhaust ducts so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in § 60.715(c) and (d). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(*2*) Determine FV by the following equation:

$$FV = \frac{\sum_{j=1}^{n} Q_{out\ j} - \sum_{i=1}^{p} Q_{in\ i}}{\sum_{k=1}^{q} A_k}$$

(Equation 6)

(D) The air passing through all natural draft openings shall flow into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward flow of air shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow through the natural draft openings shall be presumed to be inward at all times without verification.

(ii) Determine the control device efficiency using Equation (2) or Equations (4) and (5), as applicable, and the test methods and procedures specified in § 60.715(b) through (g).

(iii) Compliance is demonstrated if the installation of a total enclosure is demonstrated and the value of E determined from Equation (2) (or the value of $H_{sys}$ determined from Equations (4) and (5), as applicable) is equal to or greater than the required efficiency as specified below:

(A) For coating operations subject to the standards of § 60.712(a), (b)(2)(ii), and (b)(3), 0.95 (95 percent); or

(B) For coating operations subject to the standards of § 60.712(b)(2)(i), the value of E determined from Equation (2) (or the value of $H_{sys}$ determined from Equations (4) and (5), as applicable) pursuant to § 60.713(a)(2) prior to modification or reconstruction or 0.95 (95 percent), whichever is lower.

(6) To demonstrate compliance with § 60.712(c) (standard for new mix equipment with concurrent construction of a control device), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(i) Covers satisfying the requirements of § 60.712(c)(1)-(5) have been installed and are being used properly;

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used;

(iii) The coating mix preparation equipment is vented to a control device; and

(iv) The control device efficiency (E or $H_{sys}$, as applicable) determined using Equation (2) or Equations (4) and (5), respectively, and the test methods and procedures specified in § 60.715(b)-(g) is equal to or greater than 0.95.

(7) To demonstrate compliance with § 60.712(d)(1) (standard for mix equipment), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(i) Covers satisfying the requirements of § 60.712(c)(1)-(5) have been installed and are being used properly;

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used; and

(iii) The coating mix preparation equipment is vented to a control device.

(8) To demonstrate compliance with § 60.712(d)(2) (standard for mix equipment), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that both:

(i) Covers satisfying the requirements of § 60.712(c)(1)-(5) have been installed and are being used properly; and

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used.

(9) To determine compliance with § 60.712(e) (high-solids coatings alternative standard), each owner or operator of an affected facility shall determine the weighted average mass of VOC contained in the coating per volume of coating solids applied for each and every nominal 1-month period according to the following procedures:

(i) Determine the weight fraction of VOC in each coating applied using Method 24 as specified in § 60.715(a);

(ii) Determine the volume of coating solids in each coating applied from the facility records; and

(iii) Compute the weighted average by the following equation:

$$G = \frac{\sum_{i=1}^{n} W_{oi} M_{ci}}{\sum_{i=1}^{n} L_{si} V_{ci}}$$

(Equation 7)

(iv) For each affected facility where the value of G is less than or equal to 0.20 kilogram of VOC per liter of coating solids applied, the facility is in compliance.

(c) Startups and shutdowns are normal operation for this source category. Emissions from these operations are to be included when determining if the standards for coating operations specified in § 60.712(a) and (b) are being attained.

(d) If a control device other than a carbon adsorber, condenser, or incinerator is used to control emissions from an affected facility, the necessary operating specifications for that device must be obtained from the Administrator. An example of such a device is a flare.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988]

### § 60.714 Installation of monitoring devices and recordkeeping.

All monitoring devices required under the provisions of this section shall be installed and calibrated, according to the manufacturer's specifications, prior to the initial performance tests in locations such that representative values of the monitored parameters will be obtained. The parameters to be monitored shall be continuously measured and recorded during all performance tests.

(a) Each owner or operator of an affected coating operation that utilizes less solvent annually than the applicable cutoff provided in § 60.710(b) and that is not subject to § 60.712 (standards for coating operations) shall both:

(1) Make semiannual estimates of the projected annual amount of solvent to be utilized for the manufacture of magnetic tape at the affected facility in that calendar year and maintain records of these estimates; and

(2) Maintain records of actual solvent use.

(b) Each owner or operator of an affected coating operation demonstrating compliance by the test method described in § 60.713(b)(1) (liquid material balance) shall maintain records of all the following for each and every nominal 1-month period:

(1) Amount of coating applied at the applicator;

(2) Results of the reference test method specified in § 60.715(a) for determining the VOC content of all coatings applied;

(3) Amount VOC recovered; and

(4) Calculation of the percent VOC recovered.

(c) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a carbon adsorption system and demonstrating compliance by the procedures described in § 60.713(b)(2), (3), (4), (5), or (6) (which include control device efficiency determinations) shall carry out the monitoring and recordkeeping provisions of paragraph (c)(1) or (2) of this section, as appropriate.

(1) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in either the control device outlet gas stream or in both the control device inlet and outlet gas streams. The outlet gas stream would be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.717(d)(3). The inlet and outlet gas streams would be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.717(d)(4).

(2) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in the outlet gas stream for a minimum of one complete adsorption cycle per day for each adsorber vessel. The owner or operator may also monitor and record the concentration level of organic compounds in the common carbon adsorption system inlet gas stream or in each individual carbon adsorber vessel inlet stream. The outlet gas streams alone would be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.717(d)(3). In this case, the owner or operator shall compute daily a 3-day rolling average concentration level of organics in the outlet gas stream from each individual adsorber vessel. The inlet and outlet gas streams would be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.717(d)(4). In this case, the owner or operator shall compute daily a 3-day rolling average efficiency for each individual adsorber vessel.

(d) Each owner or operator of an affected coating operation controlled by a condensation system and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), or (5) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the temperature of the condenser exhaust stream.

(e) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a thermal incinerator and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), (5), or (6) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the combustion temperature of the incinerator. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(f) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a catalytic incinerator and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), (5), or (6) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(g) Each owner or operator of an affected coating operation demonstrating compliance pursuant to § 60.713(b)(2), (3), or (4) (which include VOC capture system efficiency determinations) shall submit a monitoring plan for the VOC capture system to the Administrator for approval along with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions. This plan shall identify the parameter to be monitored as an indicator of VOC capture system performance (e.g., the amperage to the exhaust fans or duct flow rates) and the method for monitoring the chosen parameter. The owner or operator shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the value of the chosen parameter.

(h) Each owner or operator of an affected coating operation who uses the equipment alternative described in § 60.713(b)(5) to demonstrate compliance shall follow the procedures described in paragraph (g) of this section to establish a monitoring plan for the total enclosure.

(i) Each owner or operator of an affected coating operation shall record time periods of coating operations when an emission control device is not in use.

(j) Each owner or operator of an affected coating operation or affected coating mix preparation equipment complying with § 60.712(e) shall maintain records of the monthly weighted average mass of VOC contained in the coating per volume of coating solids applied for each coating, as described in § 60.713(b)(9)(i) through (iv).

(k) Records of the measurements and calculations required in §§ 60.713 and 60.714 must be retained for at least 2 years following the date of the measurements and calculations.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

(Approved by the Office of Management and Budget under control number 2060-0171)

### § 60.715 Test methods and procedures.

Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance as follows:

(a) Method 24 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that plant coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern. For Method 24, the coating sample must be a 1-liter sample taken into a 1-liter container at a location and time such that the sample will be representative of the coating applied to the base film (i.e., the sample shall include any dilution solvent or other VOC added during the manufacturing process). The container must be tightly sealed immediately after the sample is taken. Any solvent or other VOC added after the sample is taken must be measured and accounted for in the calculations that use Method 24 results.

(b) Method 18, 25, or 25A, as appropriate to the conditions at the site, is used to determine VOC concentration. The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 60.8(d) of the General Provisions. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in paragraphs (b)(1) and (2) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(1) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual adsorber vessels pursuant to § 60.713(b)(2), (4), (5), or (6), 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.

(2) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel pursuant to § 60.713(b)(3), (4), (5), or (6), 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.

(c) Method 1 or 1A is used for sample and velocity traverses.

(d) Method 2, 2A, 2C, or 2D is used for velocity and volumetric flow rates.

(e) Method 3 is used for gas analysis.

(f) Method 4 is used for stack gas moisture.

(g) Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988]

### § 60.716 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of VOC from any emission point subject to § 60.712(c) or (d) (standards for mix equipment) at least equivalent to that required by § 60.712 (c) or (d), respectively, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a public hearing.

(c) Any person seeking permission under this section shall submit either results from an emission test that documents the collection and measurement of all VOC emissions from a given control device or an engineering evaluation that documents the determination of such emissions.

### § 60.717 Reporting and monitoring requirements.

(a) For all affected coating operations subject to § 60.712(a), (b)(1), (b)(2), or (b)(3) and all affected coating mix preparation equipment subject to § 60.712(c), the performance test data and results shall be submitted to the Administrator as specified in § 60.8(a) of the General Provisions (40 CFR part 60, subpart A). In addition, the average values of the monitored parameters measured at least every 15 minutes and averaged over the period of the performance test shall be submitted with the results of all performance tests.

(b) Each owner or operator of an affected coating operation claiming to utilize less than the applicable volume of solvent specified in § 60.710(b) in the first calendar year of operation shall submit to the Administrator, with the notification of projected startup, a material flow chart indicating projected solvent use. The owner or operator shall also submit actual solvent use records at the end of the initial calendar year.

(c) Each owner or operator of an affected coating operation initially utilizing less than the applicable volume of solvent specified in § 60.710(b) per calendar year shall:

(1) Report the first calendar year in which actual annual solvent use exceeds the applicable volume; and

(2) Report the first semiannual estimate in which annual solvent use would exceed the applicable volume.

(d) Each owner or operator of an affected coating operation, or affected coating mix preparation equipment subject to § 60.712(c), shall submit quarterly reports to the Administrator documenting the following:

(1) The 1-month amount of VOC contained in the coating, the VOC recovered, and the percent emission reduction for months of noncompliance for any affected coating operation demonstrating compliance by the performance test method described in § 60.713(b)(1) (liquid material balance);

(2) The VOC contained in the coatings for the manufacture of magnetic tape for any 1-month period during which the weighted average solvent content (G) of the coatings exceeded 0.20 kilogram per liter of coating solids for those affected facilities complying with § 60.712(e) (high-solids coatings alternative standard);

(3) For those affected facilities monitoring only the carbon adsorption system outlet concentration levels of organic compounds, the periods (during actual coating operations) specified in paragraph (d)(3)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average value of the concentration level of organic compounds in the common outlet gas stream is more than 20 percent greater than the average value measured during the most recent performance test that demonstrated compliance.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the concentration level of organic compounds in the individual outlet gas stream is more than 20 percent greater than the average value for that adsorber vessel measured during the most recent performance test that demonstrated compliance.

(4) For those affected facilities monitoring both the carbon adsorption system inlet and outlet concentration levels of organic compounds, the periods (during actual coating operations), specified in (d)(4)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average carbon adsorption system efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.713(b)(2) or (4), the value of E determined using Equation (2) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(A) or § 60.713(b)(6), 0.95 (95 percent).

(C) For those affected facilities demonstrating compliance pursuant to

§ 60.713(b)(5)(iii)(B), the required value of E determined using Equation (2) pursuant to § 60.713(a)(2) prior to modification or reconstruction or 0.95 (95 percent), whichever is lower.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.713(b)(3) or (4), the value of $H_v$ determined using Equation (4) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(A) or § 60.713(b)(6), 0.95 (95 percent).

(C) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(B), the value of $H_v$ determined using Equation 4 pursuant to § 60.713(a)(2) prior to modification or reconstruction.

(5) All 3-hour periods (during actual coating operations) during which the average exhaust temperature is 5 or more Celsius degrees above the average temperature measured during the most recent performance test that demonstrated compliance for those affected facilities monitoring condenser exhaust gas temperature;

(6) All 3-hour periods (during actual coating operations) during which the average combustion temperature is more than 28 Celsius degrees below the average combustion temperature during the most recent performance test that demonstrated compliance for those affected facilities monitoring thermal incinerator combustion gas temperature;

(7) All 3-hour periods (during actual coating operations) during which the average gas temperature immediately before the catalyst bed is more than 28 Celsius degrees below the average gas temperature during the most recent performance test that demonstrated compliance and all 3-hour periods (during actual coating operations) during which the average gas temperature difference across the catalyst bed is less than 80 percent of the average gas temperature difference during the most recent performance test that demonstrated compliance for those affected facilities monitoring catalytic incinerator catalyst bed temperature; and

(8) All 3-hour periods (during actual coating operations) during which the average total enclosure or VOC capture system monitoring device readings vary by 5 percent or more from the average value measured during the most recent performance test that demonstrated compliance for those affected facilities monitoring a total enclosure pursuant to § 60.714(h) or VOC capture system pursuant to § 60.714(g).

(e) Each owner or operator of an affected coating operation, or affected coating mix preparation equipment subject to § 60.712(c), not required to submit reports under § 60.717(d) because no reportable periods have occurred shall submit semiannual reports so affirming.

(f) Each owner or operator of affected coating mix preparation equipment that is constructed at a time when no affected coating operation is being constructed shall:

(1) Be exempt from the reporting requirements specified in § 60.7(a)(1), (2), and (4); and

(2) Submit the notification of actual startup specified in § 60.7(a)(3).

(g) The owner or operator of affected coating mix preparation equipment that is constructed at the same time as an affected coating operation shall include the affected coating mix preparation equipment in all the reporting requirements for the affected coating operation specified in § 60.7(a)(1) through (4).

(h) The reports required under paragraphs (b) through (e) of this section shall be postmarked within 30 days of the end of the reporting period.

(i) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In this event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

(Approved by the Office of Management and Budget under control number 2060-0171)

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988]

### § 60.718 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

§ 60.711(a)(16)
§ 60.713(b)(1)(i)
§ 60.713(b)(1)(ii)
§ 60.713(b)(5)(i)
§ 60.713(d)
§ 60.715(a)
§ 60.716

[53 FR 38914, Oct. 3, 1988; 53 FR 47955, Nov. 29, 1988]

## Subpart TTT—Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines

SOURCE: 53 FR 2676, Jan. 29, 1988, unless otherwise noted.

### § 60.720 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats.

(b) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 8, 1986.

### § 60.721 Definitions.

(a) As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

*Business machine* means a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:

(1) Products classified as typewriters under SIC Code 3572;

(2) Products classified as electronic computing devices under SIC Code 3573;

(3) Products classified as calculating and accounting machines under SIC Code 3574;

(4) Products classified as telephone and telegraph equipment under SIC Code 3661;

(5) Products classified as office machines, not elsewhere classified, under SIC Code 3579; and

(6) Photocopy machines, a subcategory of products classified as photographic equipment under SIC code 3861.

*Coating operation* means the use of a spray booth for the application of a single type of coating (e.g., prime coat); the use of the same spray booth for the application of another type of coating (e.g., texture coat) constitutes a separate coating operation for which compliance determinations are performed separately.

*Coating solids applied* means the coating solids that adhere to the surface of the plastic business machine part being coated.

*Color coat* means the coat applied to a part that affects the color and gloss of the part, not including the prime coat or texture coat. This definition includes fog coating, but does not include conductive sensitizers or electromagnetic interference/radio frequency interference shielding coatings.

*Conductive sensitizer* means a coating applied to a plastic substrate to render it conductive for purposes of electrostatic application of subsequent prime, color, texture, or touch-up coats.

*Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coating* means a conductive coating that is applied to a plastic substrate to attenuate EMI/RFI signals.

*Fog coating* (also known as mist coating and uniforming) means a thin coating applied to plastic parts that owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below shall be approved by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the validity of the transfer efficiency claims.

(D) Where more than one application method is used within a single coating operation, the owner or operator shall determine the volume of each coating applied by each method through a means acceptable to the Administrator and compute the volume-weighted average transfer efficiency by the following equation:

$$T_{avg} = \frac{\sum_{i=1}^{n} \sum_{k=1}^{p} L_{cik} V_{sik} T_k}{L_s}$$

TABLE 1—TRANSFER EFFICIENCIES

| Application methods | Transfer efficiency | Type of coating |
|---|---|---|
| Air atomized spray | 0.25 | Prime, color, texture, touch-up, and fog coats. |
| Air-assistd airless spray. | .40 | Prime and color coats. |
| Electrostatic air spray | .40 | Do. |

where n is the number of coatings of each type used and p is the number of application methods used.

(E) Calculate the volume-weighted average mass of VOC's emitted per unit volume of coating solids applied (N) during each nominal 1-month period for each coating operation for each affected facility by the folowing equation:

$$N = \frac{M_o + M_d}{L_s T_{avg}}$$

($T_{avg}$=T when only one type of coating operation occurs).

(ii) Where the volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of coating solids applied (N) is less than or equal to 1.5 kilograms per liter for prime coats, is less than or equal to 1.5 kilograms per liter for color coats, is less than or equal to 2.3 kilograms per liter for texture coats, and is less than or equal to 2.3 kilograms per liter for touch-up coats, the affected facility is in compliance.

(iii) If each individual coating used by an affected facility has a VOC content (kg VOC/l of solids), as received, which when divided by the lowest transfer efficiency at which the coating is applied for each coating operation results in a value equal to or less than 1.5 kilograms per liter for prime and color coats and equal to or less than 2.3 kilograms per liter for texture and touch-up coats, the affected facility is in compliance provided that no VOC's are added to the coatings during distribution or application.

(iv) If an affected facility uses add-on controls to control VOC emissions and if the owner or operator can demonstrate to the Administrator that the volume-weighted average mass of VOC's emitted to the atmosphere during each nominal 1-month period per unit volume of coating solids applied (N) is within each of the applicable limits expressed in paragraph (b)(2)(ii) of this section because of this equipment, the affected facility is in compliance. In such cases, compliance will be determined by the Administrator or a case-by-case basis.

### § 60.724 Reporting and recordkeeping requirements.

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided for in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for the initial nominal 1-month period for each coating operation from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.723(b)(2)(iii), a list of the coatings used during the initial nominal 1-month period, the VOC content of each coating calculated from data determined using Reference Method 24, and the lowest transfer efficiency at which each coating is applied during the initial nominal 1-month period.

(b) Following the initial report, each owner or operator shall:

(1) Report the volume-weighted average mass of VOC's per unit volume of coating solids applied for each coating operation for each affected facility during each nominal 1-month period in which the facility is not in compliance with the applicable emission limits specified in § 60.722. Reports of noncompliance shall be submitted on a quarterly basis, occurring every 3 months following the initial report; and

(2) Submit statements that each affected facility has been in compliance with the applicable emission limits specified in § 60.722 during each nominal 1-month period. Statements of compliance shall be submitted on a semiannual basis.

(c) These reports shall be postmarked not later than 10 days after the end of the periods specified in § 60.724(b)(1) and § 60.724(b)(2).

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine monthly VOC emissions from each coating operation for each affected facility as specified in 40 CFR 60.7(d).

(e) Reporting and recordkeeping requirements for facilities using add-on controls will be determined by the Administrator on a case-by-case basis.

(Approved by the Office of Management and Budget under control number 2060-0162)

### § 60.725 Test methods and procedures.

(a) The reference methods in appendix A to this part except as provided under § 60.8(b) shall be used to determine compliance with § 60.722 as follows:

(1) Method 24 for determination of VOC content of each coating as received.

(2) For Method 24, the sample must be at least a 1-liter sample in a 1-liter container.

(b) Other methods may be used to determine the VOC content of each coating if approved by the Administrator before testing.

### § 60.726 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to the States:

Section 60.723(b)(1)
Section 60.723(b)(2)(i)(C)
Section 60.723(b)(2)(iv)
Section 60.724(e)
Section 60.725(b)

[53 FR 2676, Jan. 29, 1988, as amended at 53 FR 19300, May 27, 1988]

## Subpart UUU—[Reserved]

## Subpart VVV—Standards of Performance for Polymeric Coating of Supporting Substrates Facilities

SOURCE: 54 FR 37551, Sept. 11, 1989, unless otherwise noted.

## § 60.740 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each coating operation and any onsite coating mix preparation equipment used to prepare coatings for the polymeric coating of supporting substrates.

(b) Any affected facility for which the amount of VOC used is less than 95 Mg per 12-month period is subject only to the requirements of § 60.744(b), § 60.747(b), and § 60.747(c). If the amount of VOC used is 95 Mg or greater per 12-month period, the facility is subject to all the requirements of this subpart. Once a facility has become subject to the requirements of this subpart, it will remain subject to those requirements regardless of changes in annual VOC use.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after April 30, 1987, except for the facilities specified in paragraph (d) of this section.

(d) This subpart does not apply to the following:

(1) Coating mix preparation equipment used to manufacture coatings at one plant for shipment to another plant for use in an affected facility (coating operation) or for sale to another company for use in an affected facility (coating operation);

(2) Coating mix preparation equipment or coating operations during those times they are used to prepare or apply waterborne coatings so long as the VOC content of the coating does not exceed 9 percent by weight of the volatile fraction;

(3) Web coating operations that print an image on the surface of the substrate or any coating applied on the same printing line that applies the image.

## § 60.741 Definitions, symbols, and cross-reference tables.

(a) All terms used in this subpart not defined below have the meaning given to them in the Act and in subpart A of this part.

*Coating applicator* means any apparatus used to apply a coating to a continuous substrate.

*Coating mix preparation equipment* means all mixing vessels in which solvent and other materials are blended to prepare polymeric coatings.

*Coating operation* means any coating applicator(s), flashoff area(s), and drying oven(s) located between a substrate unwind station and a rewind station that coats a continuous web to produce a substrate with a polymeric coating. Should the coating process not employ a rewind station, the end of the coating operation is after the last drying oven in the process.

*Common emission control device* means a device controlling emissions from an affected coating operation as well as from any other emission source.

*Concurrent* means the period of time in which construction of an emission control device serving an affected facility is commenced or completed, beginning 6 months prior to the date that construction of the affected facility commences and ending 2 years after the date that construction of the affected facility is completed.

*Control device* means any apparatus that reduces the quantity of a pollutant emitted to the air.

*Cover* means, with respect to coating mix preparation equipment, a device that fits over the equipment opening to prevent emissions of volatile organic compounds (VOC) from escaping.

*Drying oven* means a chamber within which heat is used to dry a surface coating; drying may be the only process or one of multiple processes performed in the chamber.

*Equivalent diameter* means four times the area of an opening divided by its perimeter.

*Flashoff area* means the portion of a coating operation between the coating applicator and the drying oven where VOC begins to evaporate from the coated substrate.

*Natural draft opening* means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft across such an opening is a consequence of the difference in pressures on either side of the wall or barrier containing the opening.

*Nominal 1-month period* means a calendar month or, if established prior to the performance test in a statement submitted with notification of anticipated startup pursuant to 40 CFR 60.7(a)(2), a similar monthly time period (e.g., 30-day month or accounting month).

*Onsite coating mix preparation equipment* means those pieces of coating mix preparation equipment located at the same plant as the coating operation they serve.

*Polymeric coating of supporting substrates* means a web coating process that applies elastomers, polymers, or prepolymers to a supporting web other than paper, plastic film, metallic foil, or metal coil.

*Substrate* means the surface to which a coating is applied.

*Temporary enclosure* means a total enclosure that is constructed for the sole purpose of measuring the fugitive VOC emissions from an affected facility.

*Total enclosure* means a structure that is constructed around a source of emissions and operated so that all VOC emissions are collected and exhausted through a stack or duct. With a total enclosure, there will be no fugitive emissions, only stack emissions. The drying oven itself may be part of the total enclosure.

*Vapor capture system* means any device or combination of devices designed to contain, collect, and route solvent vapors released from the coating mix preparation equipment or coating operation.

*VOC in the applied coating* means the product of Method 24 VOC analyses or formulation data (if those data are demonstrated to be equivalent to Method 24 results) and the total volume of coating fed to the coating applicator.

*VOC used* means the amount of VOC delivered to the coating mix preparation equipment of the affected facility (including any contained in premixed coatings or other coating ingredients prepared off the plant site) for the formulation of polymeric coatings to be applied to supporting substrates at the coating operation, plus any solvent added after initial formulation is complete (e.g., dilution solvent added at the coating operation). If premixed coatings that require no mixing at the plant site are used, "VOC used" means the amount of VOC delivered to the coating applicator(s) of the affected facility.

*Volatile organic compounds* or *VOC* means any organic compounds that participate in atmospheric photochemical reactions; or that are measured by a reference method, an equivalent method, an alternative method, or that are determined by procedures specified under any subpart.

*Waterborne coating* means a coating which contains more than 5 weight percent water in its volatile fraction.

*Web coating* means the coating of products, such as fabric, paper, plastic film, metallic foil, metal coil, cord, and yarn, that are flexible enough to be unrolled from a large roll; and coated as a continuous substrate by methods including, but not limited to, knife coating, roll coating, dip coating, impregnation, rotogravure, and extrusion.

(b) The nomenclature used in this subpart has the following meaning:

$A_k$=the area of each natural draft opening (k) in a total enclosure, in square meters.

$C_{aj}$=the concentration of VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

$C_{bi}$=the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

$C_{di}$=the concentration of VOC in each gas stream (i) entering the emission control device from the affected coating operation, in parts per million by volume.

$C_{fk}$=the concentration of VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in parts per million by volume.

$C_{gv}$=the concentration of VOC in the gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For purposes of calculating the efficiency of the individual adsorber vessel, $C_{gv}$ may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts.

$C_{hv}$=the concentration of VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

E=the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

F=the VOC emission capture efficiency of the vapor capture system achieved for the duration of the emission test (expressed as a fraction).

FV=the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

$H_v$=the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

$H_{sys}$=the carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

$M_{ci}$=the total mass (kg) of each coating (i) applied to the substrate at an affected coating operation during a nominal 1-month period as determined from facility records.

$M_r$=the total mass (kg) of VOC recovered for a nominal 1-month period.

$Q_{aj}$=the volumetric flow rate of each gas stream (j) exiting the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

$Q_{bi}$=the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

$Q_{di}$=the volumetric flow rate of each gas stream (i) entering the emission control device from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

$Q_{fk}$=the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

$Q_{gv}$=the volumetric flow rate of the gas stream entering each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration. For purposes of calculating the efficiency of the individual adsorber vessel, the value of $Q_{gv}$ can be assumed to equal the value of $Q_{hv}$ measured for that adsorber vessel.

$Q_{hv}$=the volumetric flow rate of the gas stream exiting each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

$Q_{in\,i}$=the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct, in standard cubic meters per hour (wet basis).

$Q_{out\,j}$=the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood, in standard cubic meters per hour (wet basis).

R=the overall VOC emission reduction achieved for the duration of the emission test (expressed as a fraction).

$RS_i$=the total mass (kg) of VOC retained on the coated substrate after oven drying or contained in waste coating for a given combination of coating and substrate.

$W_{oi}$=the weight fraction of VOC in each coating (i) applied at an affected coating operation during a nominal 1-month period as determined by Method 24.

(c) Tables 1a and 1b present a cross reference of the affected facility status and the relevant section(s) of the regulation.

TABLE 1a—CROSS REFERENCE[a] [b]

| Status | Standard | Compliance provisions § 60.743 |
|---|---|---|
| A. Coating operation: | | |
| 1. If projected VOC use is <95 Mg/yr. | § 60.740(b): Monitor VOC use | Not applicable. |
| 2. If projected VOC use is ≥95 Mg/yr. | § 60.742(b)(1): Reduce VOC emissions to the atmosphere from the coating operation by at least 90 percent; or, | (a)(1), (a)(2), (a)(3), or (a)(4); |
| | § 60.742(b)(2): Install, operate, and maintain a total enclosure around the coating operation and vent the captured VOC emissions from the total enclosure to a control device that is at least 95 percent efficient. | (b), (e). |

TABLE 1a—CROSS REFERENCE[a] [b]—Continued

| Status | Standard | Compliance provisions § 60.743 |
|---|---|---|
| B. Coating mix preparation equipment: | | |
| 1. If projected VOC use is ≥95 Mg/yr but <130 Mg/yr. | § 60.742(c)(3): (i) Install, operate, and maintain a cover on each piece of affected equipment; or (ii) install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions to a VOC control device. | (d), (e). |
| 2. If projected VOC use is ≥ 130 Mg/yr but there is no concurrent construction of a control device. | § 60.742(c)(2): (i) Install, operate, and maintain a cover on each piece of affected equipment; or (ii) install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions to a VOC control device. | (d). |
| 3. If projected VOC use is ≥130 Mg/yr and there is concurrent construction of a control device. | § 60.742(c)(1): Install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions from the covered equipment to a 95 percent efficient control device while preparation of the coating is taking place within the vessel. | (c), (e). |

[a] This table is presented for the convenience of the user and is not intended to supercede the language of the regulation. For the details of the requirements, refer to the text of the regulation.

[b] Refer to Table 1b to determine which subsections of §§ 60.744, 60.745, and 60.747 correspond to each compliance provision (§ 60.743).

TABLE 1b—CROSS REFERENCE

| Compliance provisions—§ 60.743 | Test methods—§ 60.745 | Category/equipment[a] | Monitoring requirements—§ 60.744 | Reporting and recordkeeping requirements—§ 60.747 |
|---|---|---|---|---|
| A. Coating operation: | | | | |
| (a)(1)—Gaseous emission test for coating operations not using carbon adsorption beds with individual exhausts. | (b)-(g) | General, CA, CO, TI, CI, PE, TE. | (a), (i), (j), (k), (c)(1), (d), (e), (f), (g). | (a), (d)(7), (f), (g), (h), (d)(1)(i), (d)(2)(i), (d)(3), (d)(4), (d)(5), (d)(6). |
| (a)(2)—Gaseous emission test for coating operations using carbon adsorption beds with individual exhausts. | (b)-(g) | General, CA, PE, TE | (a), (i), (j), (k), (c)(2), (g). | (a), (d)(7), (f), (g), (h), (d)(1)(ii), (d)(2)(ii), (d)(6). |
| (a)(3)—Monthly liquid material balance—can be used only when a VOC recovery device controls only those emissions from one affected coating operation. | (a) | VOC recovery | (i), (k) | (e), (f), (g), (h). |
| (a)(4)—Short-term (3 to 7 day) liquid material balance—may be used as an alternative to (a)(3). | (a) | General, CA, CO, PE, TE. | (a), (i), (j), (k), (c)(1), (c)(2), (d), (g). | (a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(3), (d)(6). |
| (b)—Alternative standard for coating operation—demonstrate use of approved total enclosure and emissions vented to a 95 percent efficient control device. | (b)-(g) | General, CA, CO, TI, CI, PE, TE. | (a), (i), (j), (k), (c)(1), (c)(2), (d), (e), (f), (h). | (a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(3), (d)(4), (d)(5), (d)(6). |
| B. Coating mix preparation equipment: | | | | |
| (c)—Standard for equipment servicing a coating operation with concurrent construction of a control device that uses at least 130 Mg/yr of VOC—demonstrate that covers meeting specifications are installed and used properly; procedures detailing proper use are posted; the mix equipment is vented to a 95 percent efficient control device. | (b)-(g) | General, CA, TI, CI | (a), (i), (j), (k), (c)(1), (c)(2), (e), (f). | (a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(4), (d)(5). |

TABLE 1b—CROSS REFERENCE—Continued

| Compliance provisions—§ 60.743 | Test methods—§ 60.745 | Category/equipment[a] | Monitoring requirements—§ 60.744 | Reporting and recordkeeping requirements—§ 60.747 |
|---|---|---|---|---|
| (d)—Standard for equipment servicing a coating operation that does not have concurrent construction of a control device but uses at least 130 Mg/yr of VOC or for equipment servicing a coating operation that uses <130 Mg/yr but ≥95 Mg/yr of VOC—demonstrate that covers meeting specifications are installed and used properly; procedures detailing proper use are posted; the mix equipment is vented to a control device (optional). | No other requirements apply. | | | |

[a] CA=carbon adsorber; CO=condenser; TI=thermal incinerator; CI=catalytic incinerator; PE=partial enclosure; TE=total enclosure.

### § 60.742 Standards for volatile organic compounds.

(a) Each owner or operator of an affected facility that is subject to the requirements of this subpart shall comply with the emissions limitations set forth in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever date comes first.

(b) For the coating operation, each owner or operator of an affected facility shall either:

(1) Reduce VOC emissions to the atmosphere from the coating operation by at least 90 percent ("emission reduction" standard); or

(2) Install, operate, and maintain a total enclosure around the coating operation and vent the captured VOC emissions from the total enclosure to a control device that is at least 95 percent effecient (alternative standard).

(c) For the onsite coating mix preparation equipment of an affected facility, the owner or operator shall comply with the following requirements, as applicable:

(1) For an affected facility that has concurrent construction of a control device and uses at least 130 Mg of VOC per 12-month period, the owner or operator shall install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions from the covered mix equipment to a 95 percent efficient control device while preparation of the coating is taking place within the vessel.

(2) For an affected facility that does not have concurrent construction of a control device but uses at least 130 Mg of VOC per 12-month period, the owner or operator shall either:

(i) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment; or

(ii) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions to a VOC control device.

(3) For an affected facility that uses at least 95 Mg but less than 130 Mg of VOC per 12-month period, the owner or operator shall either.

(i) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment; or

(ii) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions to a VOC control device.

### § 60.743 Compliance provisions.

(a) To demonstrate compliance with the emission reduction standard for coating operations specified in § 60.742(b)(1), the owner or operator of the affected facility shall use one of the following methods.

(1) *Gaseous emission test for coating operations not using carbon adsorption beds with individual exhausts.* This method is applicable when the emissions from any affected coating operation are controlled by a control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel. The owner or operator using this method shall comply with the following procedures:

(i) Construct the vapor capture system and control device so that all gaseous volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.745(b) through (g);

(ii) Determine capture efficiency from the coating operation by capturing, venting, and measuring all VOC emissions from the coating operation. During a performance test, the owner or operator of an affected coating operation located in an area with other sources of VOC shall isolate the coating operation emissions from all other sources of VOC by one of the following methods:

(A) Build a temporary enclosure, as defined in § 60.741(a) and conforming to the requirements of § 60.743(b)(1), around the affected coating operation. The temporary enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on performance of the capture system; or

(B) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected coating operation through any building ventilation system and other room exhausts such as those on drying ovens. All such ventilation air must be vented through stacks suitable for testing because the VOC content in each must be determined.

(iii) Operate the emission control device with all emission sources connected and operating.

(iv) Determine the efficiency (E) of the control device by Equation 1:

$$E = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{n} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi}} \qquad \text{(Equation 1)}$$

(v) Determine the efficiency (F) of the vapor capture system by Equation 2:

$$F = \frac{\sum_{i=1}^{n} Q_{di}C_{di}}{\sum_{i=1}^{n} Q_{di}C_{di} + \sum_{k=1}^{p} Q_{fk}C_{fk}} \qquad \text{(Equation 2)}$$

(vi) For each affected coating operation subject to § 60.742(b)(1) (emission reduction standard for coating operations), compliance is demonstrated if the product of (E)x(F) is equal to or greater than 0.90.

(2) *Gaseous emission test for coating operations using carbon adsorption beds with individual exhausts.* This method is applicable when emissions from any affected coating operation are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel. The owner or operator using this method shall comply with the following procedures:

(i) Construct the vapor capture system and control device so that each volumetric flow rate and the total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.745 (b) through (g);

(ii) Assure that all VOC emissions from the coating operation are segregated from other VOC sources and that the emissions can be captured for measurement, as described in § 60.743(a)(1)(ii) (A) and (B);

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency ($H_v$) of each individual adsorber vessel (v) using Equation 3:

$$H_v = \frac{Q_{gv}C_{gv} - Q_{hv}C_{hv}}{Q_{gv}C_{gv}} \qquad \text{(Equation 3)}$$

(v) Determine the efficiency of the carbon adsorption system ($H_{sys}$) by computing the average efficiency of the adsorber vessels as weighted by the volumetric flow rate ($Q_{hv}$) of each individual adsorber vessel (v) using Equation 4:

$$H_{sys} = \frac{\sum_{v=1}^{g} H_v Q_{hv}}{\sum_{v=1}^{g} Q_{hv}} \qquad \text{(Equation 4)}$$

(vi) Determine the efficiency (F) of the vapor capture system using Equation (2).

(vii) For each affected coating operation subject to § 60.742(b)(1) (emission reduction standard for coating operations), compliance is demonstrated if the product of ($H_{sys}$)x(F) is equal to or greater than 0.90.

(3) *Monthly liquid material balance.* This method can be used only when a VOC recovery device controls only those emissions from one affected coating operation. It may not be used if the VOC recovery device controls emissions from any other VOC emission sources. When demonstrating compliance by this method, § 60.8(f) (Performance Tests) of this part does not apply. The owner or operator using this method shall comply with the following procedures to determine the VOC emission reduction for each nominal 1-month period:

(i) Measure the amount of coating applied at the coating applicator. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the amount of coating has been determined;

(ii) Determine the VOC content of all coatings applied using the test method specified in § 60.745(a). This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the VOC content in the coating has been determined;

(iii) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of VOC recovered by the control device over each nominal 1-month period. The device shall be certified by the manufacturer to be accurate to within ±2.0 percent;

(iv) Measure the amount of VOC recovered; and

(v) Calculate the overall VOC emission reduction (R) for each and every nominal 1-month period using Equation 5. Emissions during startups and shutdowns are to be included when determining R because startups and shutdowns are part of normal operation for this source category.

$$R = \frac{M_r}{\sum_{i=1}^{n} [W_{oi}M_{ci} - RS_i]} \qquad \text{(Equation 5)}$$

If the value of R is equal to or greater than 0.90, compliance with § 60.742(b)(1) is demonstrated.

(A) The value of $RS_i$ is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of $RS_i$ that is greater than zero but less than or equal to 6 percent by weight of the liquid VOC applied:

(*1*) Measurement techniques; and

(*2*) Documentation that the measured value of $RS_i$ exceeds zero but is less than or equal to 6 percent by weight of the liquid VOC applied.

(B) For those facilities not subject to paragraph (a)(3)(v)(A) of this section, the value of $RS_i$ is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of $RS_i$ that is greater than 6 percent by weight of the liquid VOC applied.

(*1*) Measurement techniques;

(*2*) Documentation that the measured value of $RS_i$ exceeds 6 percent by weight of the liquid VOC applied; and

(*3*) Either documentation of customer specifications requiring higher values or documentation that the desired properties of the product make it necessary for $RS_i$ to exceed 6 percent by weight of the liquid VOC applied and that such properties cannot be achieved by other means.

(C) The measurement techniques of paragraphs (a)(3)(v)(A)(*1*) and (a)(3)(v)(B)(*1*) of this section shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2).

(vi) The point at which $M_r$ is to be measured shall be established when the compliance procedures are approved. The presumptive point of measurement shall be prior to separation/ purification; a point after separation/purification may be adopted for enhanced convenience or accuracy.

(4) *Short-term liquid material balance.* This method may be used as an alternative to the monthly liquid material balance described in paragraph (a)(3) of this section. The owner or operator using this method shall comply with the following procedures to determine VOC emission reduction for a 3- to 7-day period and shall continuously monitor VOC emissions as specified in § 60.744.

(i) Use the procedures described in paragraphs (a)(3) (i) through (vi) of this section to determine the overall emission reduction, R. Compliance is demonstrated if the value of R is equal to or greater than 0.90.

(ii) The number of days for the performance test (3 to 7) is to be based on the affected facility's representative performance consistent with the requirements of § 60.8(c). Data demonstrating that the chosen test period is representative shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2).

(b) Each owner or operator of an affected coating operation subject to the *standard specified in* § 60.742(b)(2) (alternative standard for coating operations) shall:

(1) Demonstrate that a total enclosure is installed. The total enclosure shall either be approved by the Administrator *in accordance with the* provisions of § 60.746, or meet the requirements in paragraphs (b)(1) (i) through (vi) of this section, as follows:

(i) The only openings in the enclosure are forced makeup air and exhaust ducts and natural draft openings such as those through which raw materials enter and exist the coating operation;

(ii) Total area of all natural draft openings does not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(iii) All access doors and windows are closed during normal operation of the enclosed coating operation, except for brief, occasional openings to accommodate process equipment adjustments. If such openings are frequent, or if the access door or window remains open for a significant amount of time during the process operation, it must be considered a natural draft opening. Access doors used routinely by workers to enter and exit the enclosed area shall be equipped with automatic closure devices;

(iv) Average inward face velocity (FV) across all natural draft openings is a minimum of 3,600 meters per hour as determined by the following procedures:

(A) Construct all forced makeup air ducts and all exhaust ducts so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in § 60.745 (c) and (d). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(B) Determine FV by Equation 6:

$$FV = \frac{\sum_{j=1}^{n} Q_{out\ j} - \sum_{i=1}^{p} Q_{in\ i}}{\sum_{k=1}^{q} A_k} \qquad \text{(Equation 6)}$$

(v) The air passing through all natural draft openings flows into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward airflow shall be verified by continuous observation using smoke tubes, streamers, tracer gases, *or other means* approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow thourgh the natural draft openings shall be presumed to be inward at all times without verification.

(vi) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening.

(2) Determine the control device efficiency using Equation (1) or Equations (3) and (4), as applicable, and the test methods and procedures specified in § 60.745 (b) through (g).

(3) Compliance is demonstrated if the installation of a total enclosure is demonstrated and *the value of E* determined from Equation (1) or the value of $H_{sys}$, determined from Equations (3) and (4), as applicable, is equal to or greater than 0.95.

(c) To demonstrate compliance with § 60.742(c)(1) (standard for coating mix preparation equipment servicing a coating operation with concurrent construction of a control device that uses at least 130 Mg per year of VOC), each owner or operator of affected coating mix preparation equipment shall demonstrate that:

(1) Covers meeting the following specifications have been installed and are being used properly:

(*i*) Cover shall be closed at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with cover in place. Such activities *shall be carried out through ports of* the minimum practical size;

(ii) Cover shall extend at least 2 centimeters beyond the outer rim of the opening or shall be attached to the rim;

(*iii*) Cover shall be *of such design* and construction that contact is maintained between cover and rim along the entire perimeter;

(iv) Any breach in the cover (such as a slit for insertion of a mixer shaft or port for addition of ingredients) shall be covered consistent with paragraphs (c)(1) (i), (ii), and (iii) of this section when not actively in use. An opening sufficient to allow safe clearance for a mixer shaft is acceptable during those periods when the shaft is in place; and

(v) A polyehtylene or nonpermanent cover may be used provided it meets the requirements of paragraphs (c)(1) (ii), (iii), and (iv) of this section. Such a cover shall not be reused after once being removed.

(2) Procedures detailing the proper use of covers, as specified in paragraph (c)(1)(i) of this section, have been posted in all areas where affected coatings mix preparation equipment is used;

(3) The coating mix preparation equipment is vented to a control device while preparation of the coating is taking place within the vessel; and

(4) The control device efficiency (E or $H_{sys}$, as applicable) determined using Equation (1) or Equations (3) and (4), respectively, and the test methods and procedures specified in § 60.745 (b) through (g) *is equal to* or greater than 0.95.

(d) To demonstrate compliance with § 60.742(c)(2) (standard for coating mix preparation equipment servicing a coating operation that does not have concurrent construction of a control device but uses at least 130 Mg of VOC per year) or § 60.742(c)(3) (standard for coating mix preparation equipment servicing a coating operation that uses at least 95 Mg but less than 130 Mg of VOC per year), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(1) Covers satisfying the specifications in paragraphs (c)(1) (i) through (v) of this section have been installed and are being properly operated and maintained; and

(2) Procedures detailing the proper use of covers, as specified in paragraph *(c)(1)(i) of this section, have* been posted in all areas where affected coating mix preparation equipment is used.

(3) Owners or operators meeting the standard specified in § 60.742 (c)(2)(ii) *or (c)(3)(ii) shall also demonstrate* that the coating mix preparation equipment is vented to a control device.

(e) If a control device other than a carbon adsorber, condenser, or incinerator is used to control emissions from an affected facility, the necessary operating specifications for that device must be approved by the Administrator. An example of such a device is a flare.

**§ 60.744 Monitoring requirements.**

(a) Each owner or operator of an affected facility shall install and calibrate all monitoring devices required under the provisions of this section according to the manufacturer's specifications, prior to the initial performance test in locations such that representative values of the monitored parameters will be obtained. The parameters to be monitored shall be continuously measured and recorded during each performance test.

(b) Each owner or operator of an affected facility that uses less than 95 Mg of VOC per year and each owner or operator of an affected facility subject to the provisions specified in § 60.742(c)(3) shall:

(1) Make semiannual estimates of the projected annual amount of VOC to be used for the manufacture of polymeric coated substrate at the affected coating operation in that year; and

(2) Maintain records of actual VOC use.

(c) Each owner or operator of an affected facility controlled by a carbon adsorption system and demonstrating compliance by the procedures described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) or § 60.743(a)(4) (short-term liquid material balance) shall carry out the monitoring provisions of paragraph (c)(1) or (2) of this section, as appropriate.

(1) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in either the control device outlet gas stream or in both the control device inlet and outlet gas streams. The outlet gas stream shall be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.747(d)(1)(i). The inlet and outlet gas streams shall be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.747(d)(2)(i).

(2) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in the outlet gas stream for a minimum of one complete adsorption cycle per day for each adsorber vessel. The owner or operator may also monitor and record the concentration level of organic compounds in the common carbon adsorption system inlet gas stream or in each individual carbon adsorber vessel inlet stream. The outlet gas streams shall be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.747(d)(1)(ii). In this case, the owner or operator shall compute daily a 3-day rolling average concentration level of organics in the outlet gas stream from each individual adsorber vessel. The inlet and outlet gas streams shall be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.747(d)(2)(ii). In this case, the owner or operator shall compute daily a 3-day rolling average efficiency for each individual adsorber vessel.

(d) Each owner or operator of an affected facility controlled by a condensation system and demonstrating compliance by the test methods described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) or § 60.743(a)(4) (short-term liquid material balance) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the temperature of the condenser exhaust stream.

(e) Each owner or operator of an affected facility controlled by a thermal incinerator and demonstrating compliance by the test methods described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the combustion temperature of the incinerator. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(f) Each owner or operator of an affected facility controlled by a catalytic incinerator and demonstrating compliance by the test methods described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(g) Each owner or operator of an affected facility who demonstrates compliance by the test methods described in § 60.743(a)(1) or (2) (which include vapor capture system efficiency determinations) or § 60.743(a)(4) (short-term liquid material balance) shall submit a monitoring plan for the vapor capture system to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions. This plan shall identify the parameter to be monitored as an indicator of vapor capture system performance (e.g., the amperage to the exhaust fans or duct flow rates) and the method for monitoring the chosen parameter. The owner or operator shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the value of the chosen parameter.

(h) Each owner or operator of an affected facility who demonstrates compliance as described in § 60.743(b) shall follow the procedures described in paragraph (g) of this section to establish a monitoring system for the total enclosure.

(i) Each owner or operator of an affected facility shall record time periods of mixing or coating operations when the emission control device is malfunctioning or not in use.

(j) Each owner or operator of an affected facility shall record time periods of mixing or coating operations when each monitoring device is malfunctioning or not in use.

(k) Records of the measurements and calculations required in § 60.743 and § 60.744 must be retained for at least 2 years following the date of the measurements and calculations.

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### § 60.745 Test methods and procedures.

Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance as follows:

(a) Method 24 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern. For Method 24, the coating sample must be a 1-liter sample collected in a 1-liter container at a point in the process where the sample will be representative of the coating applied to the substrate (i.e., the sample shall include any dilution solvent or other VOC added during the manufacturing process). The container must be tightly sealed immediately after the sample is collected. Any solvent or other VOC added after the sample is taken must be measured and accounted for in the calculations that use Method 24 results.

(b) Method 25 shall be used to determine VOC concentrations from incinerator gas streams. Alternative Methods (18 or 25A), may be used as explained in the applicability section of Method 25 in cases where use of Method 25 is demonstrated to be technically infeasible. The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 60.8(d) of the General Provisions. Except as indicated in paragraphs (b)(1) and (b)(2) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(1) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual adsorber vessels pursuant to § 60.743 (a)(1), (b), or (c), the test shall consist of three separate runs, each coinciding with one or more complete system rotations through the adsorption cycles of all the individual adsorber vessels.

(2) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel pursuant to § 60.743 (a)(2), (b), or (c), each adsorber vessel shall be tested individually. Each test shall consist of three separate runs, each coinciding with one or more complete adsorption cycles.

(c) Method 1 or 1A is used for sample and velocity traverses;

(d) Method 2, 2A, 2C, or 2D is used for velocity and volumetric flow rates;

(e) Method 3 is used for gas analysis;

(f) Method 4 is used for stack gas moisture;

(g) Methods 2, 2A, 2C, or 2D; 3; and 4 shall be performed, as applicable, at least twice during each test run.

**§ 60.746 Permission to use alternative means of emission limitation.**

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of VOC from any emission point subject to § 60.742(c) at least equivalent to that required by § 60.742(b)(2) or § 60.742(c), respectively, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means. The Administrator may condition permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as specified in § 60.742(b)(2) or § 60.742(c), respectively.

(b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a public hearing.

(c) Any person seeking permission under this section shall submit to the Administrator either results from an emission test that accurately collects and measures all VOC emissions from a given control device or an engineering evaluation that accurately determines such emissions.

**§ 60.747 Reporting and recordkeeping requirements.**

(a) For each affected facility subject to the requirements of § 60.742(b) and (c), the owner or operator shall submit the performance test data and results to the Administrator as specified in § 60.8(a) of this part. In addition, the average values of the monitored parameters measured at least every 15 minutes and averaged over the period of the performance test shall be submitted with the results of all performance tests.

(b) Each owner or operator of an affected facility subject to the provisions specified in § 60.742(c)(3) and claiming to use less than 130 Mg of VOC in the first year of operation and each owner or operator of an affected facility claiming to use less than 95 Mg of VOC in the first year of operation shall submit to the Administrator, with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions, a material flow chart indicating projected VOC use. The owner or operator shall also submit actual VOC use records at the end of the initial year.

(c) Each owner or operator of an affected facility subject to the provisions of § 60.742(c)(3) and initially using less than 130 Mg of VOC per year and each owner or operator of an affected facility initially using less than 95 Mg of VOC per year shall:

(1) Record semiannual estimates of projected VOC use and actual 12-month VOC use;

(2) Report the first semiannual estimate in which projected annual VOC use exceeds the applicable cutoff; and

(3) Report the first 12-month period in which the actual VOC use exceeds the applicable cutoff.

(d) Each owner or operator of an affected facility demonstrating compliance by the methods described in § 60.743(a)(1), (2), (4), (b), or (c) shall maintain records and submit quarterly reports to the Administrator documenting the following:

(1) For those affected facilities monitoring only the carbon adsorption system outlet concentration levels of organic compounds, the periods (during actual coating operations) specified in paragraph (d)(1)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive system rotations through the adsorption cycles of all the individual adsorber vessels during which the average value of the concentration level of organic compounds in the common outlet gas stream is more than 20 percent greater than the average value measured during the most recent performance test that demonstrated compliance.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the concentration level of organic compounds in the individual outlet gas stream is more than 20 percent greater than the average value for that adsorber vessel measured during the most recent performance test that demonstrated compliance.

(2) For those affected facilities monitoring both the carbon adsorption system inlet and outlet concentration levels of organic compounds, the periods (during actual coating operations), specified in paragraph (d)(2)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average carbon adsorption system efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.743(a)(1), the value of E determined using Equation (1) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance by the performance test described in § 60.743(a)(4), the average value of the system efficiency measured with the monitor during the most recent performance test that demonstrated compliance.

(C) For those affected facilities demonstrating compliance pursuant to § 60.743(b) or (c), 0.95.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel during which the average carbon adsorber vessel efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.743(a)(2), (b), or (c), the value of $H_v$ determined using Equation (3) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance by the performance test described in § 60.743(a)(4), the average efficiency for that adsorber vessel measured with the monitor during the most recent performance test that demonstrated compliance.

(3) For those affected facilities monitoring condenser exhaust gas temperature, all 3-hour periods (during actual coating operations) during which the average exhaust temperature is 5 or more Celsius degrees above the average temperature measured during the most recent performance test that demonstrated compliance;

(4) For those affected facilities monitoring thermal incinerator combustion gas temperature, all 3-hour periods (during actual coating operations) during which the average combustion temperature of the device is more than 28 Celsius degrees below the average combustion temperature of the device during the most recent performance test that demonstrated compliance;

(5) For those affected facilities monitoring catalytic incinerator catalyst bed temperature, all 3-hour periods (during actual coating operations) during which the average gas temperature immediately before the catalyst bed is more than 28 Celsius degrees below the average gas temperature during the most recent performance test that demonstrated compliance and all 3-hour periods (during actual coating operations) during which the average gas temperature difference across the catalyst bed is less than 80 percent of the average gas temperature difference during the most recent performance test that demonstrated compliance;

(6) For each affected facility monitoring a total enclosure pursuant to § 60.744(h) or vapor capture system pursuant to § 60.744(g), all 3-hour periods (during actual coating operations) during which the average total enclo-

sure or vapor capture system monitor readings vary by 5 percent or more from the average value measured during the most recent performance test that demonstrated compliance.

(7) Each owner or operator of an affected coating operation not required to submit reports under paragraphs (d)(1) through (6) of this section because no reportable periods have occurred shall submit semiannual statements clarifying this fact.

(e) Each owner or operator of an affected coating operation, demonstrating compliance by the test methods described in § 60.743(a)(3) (liquid-liquid material balance) shall submit the following:

(1) For months of compliance, semiannual reports to the Administrator stating that the affected coating operation was in compliance for each 1-month period; and

(2) For months of noncompliance, quarterly reports to the Administrator documenting the 1-month amount of VOC contained in the coatings, the 1-month amount of VOC recovered, and the percent emission reduction for each month.

(f) Each owner or operator of an affected coating operation, either by itself or with associated coating mix preparation equipment, shall submit the following with the reports required under paragraphs (d) and (e) of this section:

(1) All periods during actual mixing or coating operations when a required monitoring device (if any) was malfunctioning or not operating; and

(2) All periods during actual mixing or coating operations when the control device was malfunctioning or not operating.

(g) The reports required under paragraphs (b), (c), (d), and (e) of this section shall be postmarked within 30 days of the end of the reporting period.

(h) Records required in § 60.747 must be retained for at least 2 years.

(i) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In this event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

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### § 60.748 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities that will not be delegated to States: §§ 60.743(a)(3)(v) (A) and (B); 60.743(e); 60.745(a); 60.746.

## APPENDIXES TO PART 60

## APPENDIX A—TEST METHODS

Method 1—Sample and velocity traverses for stationary sources
Method 1A—Sample and velocity traverses for stationary sources with small stacks or ducts
Method 2—Determination of stack gas velocity and volumetric flow rate (Type S pitot tube)
Method 2A—Direct measurement of gas volume through pipes and small ducts
Method 2B—Determination of exhaust gas volume flow rate from gasoline vapor incinerators
Method 2C—Determination of stack gas velocity and volumetric flow rate in small stacks or ducts (standard pitot tube)
Method 2D—Measurement of gas volumetric flow rates in small pipes and ducts
Method 3—Gas analysis for carbon dioxide, oxygen, excess air, and dry molecular weight
Method 3A—Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources (Instrumental Analyzer Procedure)
Method 4—Determination of moisture content in stack gases
Method 5—Determination of particulate emissions from stationary sources
Method 5A—Determination of particulate emissions from the asphalt processing and asphalt roofing industry
Method 5B—Determination of nonsulfuric acid particulate matter from stationary sources
Method 5C [Reserved]

Method 5D—Determination of particulate emissions from positive pressure fabric filters
Method 5E—Determination of particulate emissions from the wool fiberglass insulation manufacturing industry
Method 5F—Determination of nonsulfate particulate matter from stationary sources
Method 5G—Determination of particulate emissions fromwood heaters from a dilution tunnel sampling location
Method 5H—Determination of particulate emissions from wood heaters from a stack location
Method 6—Determination of sulfur dioxide emissions from stationary sources
Method 6A—Determination of sulfur dioxide, moisture, and carbon dioxide emissions from fossil fuel combustion sources
Method 6B—Determination of sulfur dioxide and carbon dioxide daily average emissions from fossil fuel combustion sources
Method 6C—Determination of Sulfur Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure)
Method 7—Determination of nitrogen oxide emissions from stationary sources
Method 7A—Determination of nitrogen oxide emissions from stationary sources—Ion chromatographic method
Method 7B—Determination of nitrogen oxide emissions from stationary sources (Ultraviolet spectrophotometry)
Method 7C—Determination of nitrogen oxide emissions from stationary sources—Alkaline-permanganate/colorimetric method
Method 7D—Determination of nitrogen oxide emissions from stationary sources—Alkaline-permanganate/ion chromatographic method
Method 7E—Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Procedure)
Method 8—Determination of sulfuric acid mist and sulfur dioxide emissions from stationary sources
Method 9—Visual determination of the opacity of emissions from stationary sources
Alternate method 1—Determination of the opacity of emissions from stationary sources remotely by lidar
Method 10—Determination of carbon monoxide emissions from stationary sources
Method 10A—Determination of carbon monoxide emissions in certifying continuous emission monitoring systems at petroleum refineries
Method 10B—Determination of carbon monoxide emissions from stationary sources
Method 11—Determination of hydrogen sulfide content of fuel gas streams in petroleum refineries
Method 12—Determination of inorganic lead emissions from stationary sources
Method 13A—Determination of total fluoride emissions from stationary sources—SPADNS zirconium lake method
Method 13B—Determination of total fluoride emissions from stationary sources—Specific ion electrode method
Method 14—Determination of fluoride emissions from potroom roof monitors for primary aluminum plants
Method 15—Determination of hydrogen sulfide, carbonyl sulfide, and carbon disulfide emissions from stationary sources
Method 15A—Determination of total reduced sulfur emissions from sulfur recovery plants in petroleum refineries
Method 16—Semicontinuous determination of sulfur emissions from stationary sources
Method 16A—Determination of total reduced sulfur emissions from stationary sources (impinger technique)
Method 16B—Determination of total reduced sulfur emissions from stationary sources
Method 17—Determination of particulate emissions from stationary sources (in-stack filtration method)
Method 18—Measurment of gaseous organic compound emissions by gas chromatography
Method 19—Determination of sulfur dioxide removal efficiency and particulate, sulfur dioxide and nitrogen oxides emission rates
Method 20—Determination of nitrogen oxides, sulfur dioxide, and diluent emissions from stationary gas turbines
Method 21—Determination of volatile organic compound leaks
Method 22—Visual determination of fugitive emissions from material sources and smoke emissions from flares
Method 23—Determination of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans From Stationary Sources
Method 24—Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings
Method 24A—Determination of volatile matter content and density of printing inks and related coatings
Method 25—Determination of total gaseous nonmethane organic emissions as carbon
Method 25A—Determination of total gaseous organic concentration using a flame ionization analyzer
Method 25B—Determination of total gaseous organic concentration using a nondispersive infrared analyzer

Region 5, notified Robert P. Miller, Chief, Air Quality Division, MDNR, of USEPA's approval of Michigan's request on August 18, 1992.

The USEPA has determined that this change to the ozone monitoring season in Michigan complies with all applicable requirements of the Clean Air Act and USEPA policy and regulations concerning such revisions. Due to the minor nature of this revision, USEPA concluded that conducting notice and comment rulemaking prior to approving the revision would have been "unnecessary and contrary to the public interest," and hence was not required by the Administrative Procedure Act, 5 U.S.C. 553(b). This action became final and effective on August 18, 1992, the date of USEPA approval of the States's request.

This action has been classified as a Table 3 action by the Regional Administrator under the procedures published in the **Federal Register** on January 19, 1989 (54 FR 2214–2225). On January 6, 1989, the Office of Management and Budget waived Table 2 and 3 State Implementation Plan (SIP) revisions (54 FR 2222) from the requirements of Section 3 of Executive Order 12291 for a period of 2 years. USEPA has submitted a request for a permanent waiver for Table 2 and Table 3 SIP revisions. The OMB has agreed to continue the temporary waiver until such time as it rules on USEPA's request.

Under section 307(b)(1) of the Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by November 27, 1992. This action may not be challenged later in proceedings to enforce its requirements (see 307(b)(2)).

**List of Subjects in 40 CFR Part 58**

Air pollution control, Intergovernmental relations.

Dated: July 28, 1992.

**Robert Springer,**

*Acting Regional Administrator.*

Title 40, part 58 of the Code of Federal Regulations is being amended as follows:

## PART 58—[AMENDED]

1. The authority citation for part 58 continues to read as follows:

**Authority:** 42 U.S.C. 7410, 7601(a), 7613, 7619.

**Appendix D—[Amended]**

2. In Appendix D; in the table in section 2.5, the entry for Michigan is revised to read as follows:

OZONE MONITORING SEASON BY STATE

| State | Begin month | End month |
|---|---|---|
| * | * | * |
| Michigan | April | September. |
| * | * | * |

[FR Doc. 92–23461 Filed 9–25–92; 8:45 am]

BILLING CODE 6560-50-M

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**40 CFR Part 60**

**[AD–FRL–3482–1]**

**RIN 2060–AC67**

## Standards of Performance for New Stationary Sources; Calciners and Dryers in Mineral Industries

**AGENCY:** Environmental Protection Agency.

**ACTION:** Final rule.

**SUMMARY:** Standards of performance for calciners and dryers in mineral industries were proposed in the **Federal Register** on April 23, 1986. This action promulgates standards of performance for calciners and dryers in the mineral industries. These standards implement Section 111 of the Clean Air Act and are based on the Administrator's determination that calciners and dryers in the mineral industries cause or contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The intended effect of these standards is to require all new, modified, or reconstructed calciners and dryers to achieve emission levels that reflect the best demonstrated system of continuous emission reduction, considering costs, nonair quality health, and environmental and energy impacts.

**DATES:** *Effective Date.* September 28, 1992.

*Judicial Review.* Under section 307(b)(1) of the Clean Air Act, judicial review of this new source performance standard (NSPS) is available only by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Clean Air Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

**ADDRESSES:** *Background Information Document.* The background information document (BID) for the promulgated standards may be obtained from the U.S. EPA Library (MD–35), Research Triangle Park, North Carolina 27711, telephone number (919) 541–2777. Please refer to "Calciners and Dryers in Mineral Industries—Background Information for the Promulgated Standards," EPA 450/3–85–025b. The BID contains (1) a summary of all the public comments made on the proposed standards and the Administrator's response to comments; (2) a summary of the changes made to the regulation since proposal; and (3) the final Environmental Impact Statement which summarizes the impacts of the standards.

*Docket.* A docket, number A–82–39, containing information considered by EPA in development of the promulgated standards is available for public inspection between 8:30 a.m. and 3:30 p.m., Monday through Friday, at EPA's Air Docket Section (LE–131), Waterside Mall, room M1500, 1st Floor, 401 M Street, SW., Washington, DC 20460. A reasonable fee may be charged for copying.

**FOR FURTHER INFORMATION CONTACT:** Ms. Linda Herring, telephone (919) 541–5358, concerning regulatory decisions; Mr. Bill Neuffer, telephone (919) 541–5435, concerning technical aspects of the industry and control technologies. The address for the above contacts is Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

**SUPPLEMENTARY INFORMATION:**

### I. The Standards

Standards of performance for new sources established under section 111 of the Clean Air Act reflect:

> * * * application of the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated [section 111(a)(1)].

For convenience, this will be referred to as "best demonstrated technology" or "BDT."

The promulgated standards apply to new, modified, and reconstructed calciners and dryers at plants that process or produce any of the following minerals or their concentrates: Alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

The affected facility for mineral processing plants in each of the industries listed above would be each new, modified or reconstructed calciner or dryer. The types of dryers to which the standards apply include: rotary (direct), rotary (indirect), fluid bed, vibrating grate, flash, and spray dryers. The types of calciners to which the standards apply include: Rotary, flash, and kettle calciners; multiple hearth furnaces; and expansion furnaces.

The following processes and process units used at mineral processing plants would not be regulated under this NSPS: Vertical shaft kilns in the magnesium compounds industry; the chlorination-oxidation process in the titanium dioxide industry; coating kilns, mixers, and aerators in the roofing granules industry; and tunnel kilns, tunnel dryers, apron dryers, and grinding equipment that also dries the process material used in any of the 17 mineral industries. In addition, for the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered because these are the only major sources of air pollution in that industry that fall under this generic source category.

The standards are based on emission levels achievable using well-designed and operated fabric filters, wet scrubbers or electrostatic precipitators (ESP's). All of these systems are considered BDT for controlling emissions from calciners and dryers in this source category, depending on the type of calciner and dryer and mineral industry. The promulgated standards limit stack emissions of particulate matter from affected facilities. The standards for stack emissions limit the concentration of particulate matter to 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series. For dryers, the concentration of particulate matter is limited to 0.057 g/dscm (0.025 gr/dscf).

Stack emissions would also be limited to 10 percent opacity for process units controlled with dry control devices. The visible emissions standard would not apply to affected facilities that use wet scrubbers to control emissions. Instead, monitoring and reporting of the operating parameters of wet scrubbers (pressure drop and liquid flow rate) would be required to indicate that the control device is properly operated and maintained on a routine basis.

When a dry control device (e.g., baghouse or ESP) is used to comply with the calciner or dryer mass emission standard, the owners or operators of the units are required to install a Continuous Opacity Monitoring System (COMS), except as noted below.

Owners or operators of ball clay vibrating grate dryers, bentonite rotary dryers, diatomite flash dryers, diatomite rotary calciners, feldspar rotary dryers, fire clay rotary dryers, industrial sand fluid bed dryers, kaolin rotary calciners, perlite rotary dryers, roofing granules fluid bed dryers, roofing granules rotary dryers, talc rotary calciners, titanium dioxide fluid bed dryers, titanium dioxide spray dryers, vermiculite fluid bed dryers, or vermiculite rotary dryers who use a dry control device may have a certified visible emissions observer measure and record the opacity of the visible emissions daily in lieu of using a COMS. Owners or operators of ball clay rotary dryers, diatomite rotary dryers, feldspar fluid bed dryers, fuller's earth rotary dryers, gypsum rotary dryers, gypsum flash calciners, gypsum kettle calciners, industrial sand rotary dryers, kaolin rotary dryers, kaolin multiple hearth furnaces, perlite expansion furnaces, talc flash dryers, talc rotary dryers, titanium dioxide direct or indirect rotary dryers or vermiculite expansion furnaces who use a dry control device are exempt from the monitoring requirements.

When a wet scrubber is used to comply with the calciner or dryer mass emission standard, the owner or operator would be required to install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. The pressure loss monitoring device must be certified by the manufacturer to be accurate within 1 inch of water column (in. W.C.) gauge pressure. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

Method 5 of appendix A, 40 CFR part 60, will be used to determine compliance with the stack concentration standard. Method 9 of Appendix A and the procedures in 40 CFR 60.11 will be used to measure the opacity of stack emissions from dry control devices.

### II. Environmental Impacts

The standards will reduce projected nationwide particulate emissions from new, modified, and reconstructed calciners and dryers in the mineral industries in the fifth year following promulgation of the standards by 7,900 megagrams (Mg) (8,800 tons) compared to emissions allowed under typical State process weight regulations. This represents a 76 percent reduction in particulate matter emissions from these sources.

The nationwide increase in solid waste (as a sludge containing 70 percent moisture) in the fifth year would be 7,500 Mg (8,300 tons) compared to the State Implementation Plan (SIP) level. The only solid waste impacts would be from the solids in the sludge produced by wet scrubbers. Typically, a particulate-contaminated water stream is pumped to a settling pond on the site. The solids settle in the pond, and the water is recirculated to the scrubber. When solids fill the pond, the pond could be dredged and the solids could be landfilled, or a new pond could be constructed. Solid wastes from wet scrubbers used to control emissions from dryers and calciners are not classified as hazardous wastes under the regulations adopted to implement the Resource Conservation and Recovery Act. The standards would result in negligible adverse water, noise, and radiation impacts.

### III. Energy Impacts

In the fifth year after the NSPS would become applicable, the maximum increase in energy consumption for mineral calciner and dryer control devices would be 17,000 megawatt-hours (MWh) compared to the SIP level of control for typical facilities. This incremental energy requirement of the NSPS to operate control equipment would be less than 1 percent of the energy demands to operate the calciner and dryer process units.

### IV. Economic Impacts

Based on industry growth projections, it is estimated that 62 new claciners and 32 new dryers will be installed in the first 5 years that the NSPS is in effect. In addition, during this same time period it is expected that 60 calciners and 44 dryers will be replaced at existing facilities at the end of their useful lives.

The total nationwide incremental capital cost of pollution control equipment in the fifth year would range from $2.2 to $3.0 million under the standards compared to the SIP level. The variation in costs is due to those process units for which either a fabric filter or a wet scrubber could be installed. If only wet scrubbers were installed, the capital cost of installation would be lower than if only fabric filters were installed. For the 104 new process units that are projected in the first 5 years of the NSPS to replace existing units at the end of their useful lives, capital control device costs would increase over baseline levels in 23 percent of the cases as a result of upgrading the design of the control devices (e.g., increased pressure drop for a wet scrubber). In 11 percent of the cases, the existing wet scrubber control devices are operated at pressure drops that achieve both the SIP and NSPS emission limits and, therefore, no incremental capital costs would be incurred as a result of the NSPS. In 66 percent of the cases, fabric filters installed to meet SIP emission limits would achieve the NSPS emission limit with improved operation and maintenance. Therefore, there is no capital cost increase for fabric filter control devices.

The total nationwide incremental annualized cost of pollution control equipment in the fifth year would range from $0.7 to $1.0 million. If only wet scrubbers were installed where an option exists, the annualized costs would be higher than if only fabric filters were installed because of the additional energy costs associated with operating a scrubber and the product recovery credits associated with operating a fabric filter.

The annualized control device costs for the 104 projected process units would increase as a result of improved operation and maintenance of fabric filters (66 percent of the cases) or as a result of upgrading the design of a wet scrubber or ESP (23 percent of the cases). As with the capital costs, annualized control costs would not change in 11 percent of the cases where wet scrubbers achieve both the SIP and NSPS emission limits.

The projected growth and profitability of the 17 mineral industries are not expected to be affected adversely by implementation of the NSPS. For 15 of the 17 industries included in the analysis, the product price increases that would be required as a result of the NSPS would typically be less than 0.5 percent. Typical size facilities in the fire clay and lightweight aggregate industries would experience product price increases of 1.00 and 1.75 percent, respectively, as a result of implementation of the NSPS.

A detailed discussion of the costs and economic impacts associated with the NSPS is contained in the preamble (51 FR 15438; April 23, 1986) and BID (EPA 450/3-85-025a) for the proposed standards.

## V. Public Participation

Prior to proposal of the standards, interested parties were advised by public notice in the Federal Register (50 FR 31025; July 31, 1985) of a meeting of the National Air Pollution Control Techniques Advisory Committee to discuss the standards for calciners and dryers in mineral industries recommended for proposal. The meeting was held on September 17, 1985. The meeting was open to the public and each attendee was given an opportunity to comment on the standards recommended for proposal. The proposed standards were published in the Federal Register on April 23, 1986 (51 FR 15438).

The preamble to the proposed standards discussed the availability of the BID, "Calciners and Dryers in Mineral Industries—Background Information for Proposed Standards" (EPA-450/3-85-025a), which described in detail the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal and, when requested, copies of the BID were distributed to interested parties. To provide interested persons the opportunity for oral presentation of data, views, or arguments concerning the proposed standards, a public hearing was held on June 9, 1986, at Research Triangle Park, North Carolina. The hearing was open to the public and each attendee was given an opportunity to comment on the proposed standards. The public comment period was from April 23, 1986, to July 7, 1986.

Fourteen comment letters were received and 12 interested parties testified at the public hearing concerning issues relative to the proposed standards. The comments have been carefully considered and, where determined to be appropriate by the Administrator, changes have been made in the proposed standards.

## VI. Significant Comments and Changes to the Proposed Standards

Comments on the proposed standards were received from industry, trade associations, and State air pollution control agencies. A detailed discussion of these comments and responses can be found in the BID, which is referred to in the ADDRESSES section of this preamble. The summary of comments and responses in the BID serves as the basis for the revisions which have been made to the standards between proposal and promulgation.

In response to the public comments and as a result of EPA's reevaluation, several changes have been made to the standards since proposal. The definition of "mineral processing plant" in the standards was revised to provide that a new, modified, or reconstructed dryer or calciner which processes a mixture of minerals is covered by the standards if the majority of the material being processed (greater than 50 percent) is any of the following minerals or a combination of these minerals: Alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

Also, changes have been made with regard to the opacity monitoring requirements. The owners or operators of certain units that use a dry control device to comply with the calciner or dryer mass emissions standard are required to install a COMS, except as discussed previously under Section I of this preamble. In addition, certain calciners and dryers as listed in Section I and in the regulation are exempt from the monitoring requirement.

A technical correction was made to the final standards to clarify the monitoring and recordkeeping requirements for facilities which are controlled by wet scrubbers. In addition, the semiannual recalibration requirements for monitoring devices in § 60.734, Monitoring of emissions and operations, have been deleted. The only requirement for COM's intended for operation and maintenance are daily zero and span checks.

In § 60.735, paragraph (b) was added to clarify that each owner or operator who uses a wet scrubber to comply with the standards must record daily the arithmetic average over a 2-hour period of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flowrate.

The major comments and responses are summarized in this preamble. Most of the comment letters contained multiple comments. The comments have been divided into the following areas: Need for Regulation of Source Category, Control Technology, Economic Impact, Selection of Emission Limits, and Monitoring Requirements.

### *A. Need for Regulation of Source Category*

Several commenters questioned EPA's determination that calciners and dryers in mineral industries are sources of emissions that cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health and welfare.

There are six source categories currently listed on the NSPS priority list (August 21, 1979; 44 FR 49225; revised January 8, 1982; 47 FR 950) that include all 17 mineral industries being covered by this NSPS. Number 13 on the priority list is Nonmetallic Mineral Processing, which includes sand and gravel, clay (ball clay, bentonite, fuller's earth, kaolin), talc, feldspar, diatomite, roofing granules, and vermiculite. Number 14 on the priority list, Metallic Mineral

Processing, includes aluminum, magnesium compounds, and titanium dioxide. The lightweight aggregate (LWA) industry (clay, shale, slate) is Number 32 on the NSPS priority list. Numbers 34, 46, and 54 on the list are gypsum, brick and related clay products (fire clay), and perlite, respectively. The priority list was promulgated under Section 111(f) of the Clean Air Act. Source categories were included on the list if, in the Administrator's judgment, they cause or significantly contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. Source categories were ranked in order of priority according to (1) quantity of emissions; (2) potential impact on health and welfare; and (3) mobility and competitive nature of the source category.

These industries were included on the NSPS priority list because of their emissions of particulate matter. Particulate matter is a criteria pollutant which has been determined to be an air pollutant that may endanger public health and welfare and for which a national ambient air quality standard (NAAQS) has been promulgated (40 CFR 50.6 and 50.7). Fuller's earth, alumina, ball clay, bentonite, fire clay, kaolin, magnesite, and other dusts emitted by the industries covered by the NSPS are types of particulate matter. The basis for the Administrator's determination that particulate emissions may endanger public health and welfare is presented in the rulemaking for setting and revising the NAAQS for particulate matter (52 FR 24634; July 1, 1987).

The main purpose of standards of performance is to require new sources, wherever located, to reduce emissions to the level achievable by the best technological system of continuous emission reduction considering the cost of achieving such emission reduction, any nonair quality health and environmental impact, and energy requirements (BDT) [Section 111(a)(1)]. Congress recognized that establishing such standards would minimize increases in air pollution from new sources, thereby improving air quality as the nation's industrial base is replaced over the long term. An NSPS thereby serves as a distinct means of achieving the Act's goals, supplementing the role played by the requirements, including Reasonably Available Control Technology requirements for existing and new sources within State implementation plans developed for the purpose of attaining the NAAQS.

The existence of other environmental regulations was considered during selection of BDT, but their existence does not lead the EPA to conclude that standards reflecting better control technology cannot be applied at reasonable costs.

The EPA has considered the emission reductions, costs, and other impacts due to emission controls and has concluded that the controls underlying the standards are BDT. Under Section 111 of the Clean Air Act, EPA is therefore required to promulgate standards of performance that reflect BDT for this category of sources.

### *B. Control Technology*

Several commenters perceived that the proposed standards did not allow for the use of low-energy wet scrubbers because control devices with greater energy consumption are required to achieve the NSPS limits. They felt that energy consumption is an important consideration in the selection of a control device and it is inappropriate to regulate against the use of energy-efficient devices.

The EPA does not necessarily recommend the use of a high pressure drop scrubber or any other emission control technology to attain and maintain compliance with the performance requirements of this standard. Compliance with the pollutant concentration limits of this standard can generally be achieved by application of one of many alternative emission control strategies and, for a specific case, EPA does not require that a particular control device be used.

In several industries, EPA has determined that low energy wet scrubbers (pressure drops less than 6 inches of water gauge) can achieve the standard based on emission test data presented in chapter 4 of the proposal BID. The pressure drops required for scrubbers to meet the standards were based on the most-difficult-to-control case for that particular process unit in each industry. Other process units in that industry that are less difficult to control should be able to comply with this NSPS using lower pressure drops. In all cases, the cost, energy, and economic impacts associated with any increased pressure drop were evaluated and determined to be reasonable by EPA.

### *C. Economic Impact*

Seven commenters stated that the LWA industry is declining due to rising energy costs, environmental control costs, and impacts of product substitutes, in particular, pumice. Two of these commenters felt that the LWA industry would be destroyed by the proposed standards. One commenter stated that, due to the additional environmental control costs, many companies would continue to operate old, existing sources and eventually the industry would die of old age and lack of reinvestment. The commenters suggested that the LWA industry either be dropped because of economic reasons or that an alternative control level equal to current State regulations be selected.

One of the commenters stated that the incremental capital cost for a lightweight aggregate calciner would be 10 to 20 times higher than the cost for other industries based on data in the proposal BID. Also, the commenter calculated the annual incremental cost for this industry to be 4–9 times that estimated by EPA for other industries. He also stated that the costs and product price increases were underestimated by EPA and that these costs and price increases would be overly burdensome on the LWA industry considering that this industry accounted for only 5.8 percent of the emission reduction from this NSPS.

Another commenter believed that this NSPS would have a doubling effect in terms of costs on the LWA industry as the standards also apply to the refractory industry whose products are used by the LWA industry. This commenter also stated that this NSPS would have a similar cumulative economic impact on the fire clay industry as that industry uses both dryers and calciners. He also stated that other regulated minerals are used in the refractory products and, therefore, price increases could approach 3–4 percent and create a major burden on the refractory industry.

The EPA believes the costs and economic impacts associated with this NSPS are reasonable and would not have the disruptive impact on the LWA and refractory industries described by the commenters. Many factors such as obsolete machinery; newer, more efficient and competitive plants; changing market demands; and better substitute products influence a corporate decision as to whether it is prudent to invest in new equipment or to continue to operate old, existing equipment until operation is no longer possible. The product price increases attributable to the NSPS are quite small—less than 2 percent for all industries. It is possible that various forces external to the costs of NSPS would preclude investment in newer plants and equipment. The actual cost, however, resulting from this NSPS is very small, and it is unlikely that investment plans would be made based on a cost so small.

With regard to pumice, there is no doubt that pumice is a substitute for LWA, although in many cases pumice is an inferior substitute. The LWA industry has a far larger share of the total market (LWA plus pumice) than pumice. Pumice's share of the market has ranged from 9 to 19 percent of the total market, an average of 13 percent. The current levels of production of LWA are down from past levels. However, the losses in LWA production are due to other factors and not due to gains by pumice as pumice's recent share of the total market is similar to its historical position. Additionally, pumice production from domestic mines has declined, as well as pumice imports, signalling a downturn in the total market for both products. The EPA does not believe that the cost of this NSPS will lead to a competitive disadvantage for the LWA industry.

In regard to the incremental cost of an NSPS, it is important to establish a common basis. One basis used by EPA is the ratio of the incremental cost of the NSPS to the megagrams (Mg) of reduction in particulate emissions. The range of incremental cost using this approach for the LWA industry, depending on the type and size of the affected facility, is $240 to $1,100/Mg. This is within the range of incremental cost per megagram ratios determined for the other industries affected by the NSPS.

Another measure of the effect of incremental cost relates incremental cost to the selling price of the product. Based on a product price of $22/Mg for the LWA industry and allowing for the increased costs that the commenter felt EPA missed, the percent product price increase including electrical costs would be 0.4 to 2.4 percent depending on the type of control device. These impacts were considered reasonable and not burdensome by EPA.

Additive effects of the NSPS are possible where an industry utilizes both calciners and dryers. In the case of fire clay production, cumulative effects could be as high as 2 percent; although effects would typically be 1.6 percent using the least costly control device for a rotary dryer. The 2 percent estimate is based on the smallest plant size and resultant worst case.

In estimating the additive effects for refractory products manufacturing, the commenter simply added the price increase for LWA and the price increase for fire clay. This is an overstatement because refractories are only a portion of the cost components for LWA. In order to calculate the actual effect, one needs to know the percent of the LWA plant's total expenses that is attributable to refractory products. This can then be used to calculate how much the plant's total expenses will increase as a result of any increase in the price for refractory products. In any case, the increase will be less than the 3 to 4 percent estimated by the commenter. Therefore, EPA does not believe the NSPS will have a doubling effect in terms of cost on the LWA industry.

## *D. Selection of Emission Limits*

One commenter recommended limiting emissions from both calciners and dryers to 0.092 g/dscm (0.040 gr/dscf). The commenter felt the proposed limit for dryers of 0.057 g/dscm would preclude the use of low energy scrubbers. Two commenters questioned the fairness and rationale of having a more stringent standard (0.057 g/dscm) for dryers alone compared with the standard (0.092 g/dscm) for dryers and calciners in series. One of the commenters stated that it did not seem equitable because producers without calciners but with dryers would be bound by a more stringent standard.

The NSPS emission limit for calciners and for dryers and calciners in series (0.092 g/dscm) is different than for dryers alone (0.057 g/dscm) because EPA's emission test data support these limits. As shown in chapter 4 of the proposal BID, all emission test data for dryers were less than 0.057 g/dscm except for four dryers controlled by wet scrubbers and one controlled by a baghouse which was not operating properly as there was leakage through a closed bypass damper. By using EPA's wet scrubber model, increases in pressure drop were calculated to ascertain what is required to achieve 0.057 g/dscm. All emission test data for calciners were less than 0.092 g/dscm except for three calciners controlled by wet scrubbers. Again, EPA's wet scrubber model was used to determine the pressure drop required to achieve 0.092 g/dscm. Also, emission test results for a flash dryer/rotary calciner installed in series were 0.092 g/dscm.

These limits are based on EPA's judgment of the technology which represents BDT considering the cost, any nonair quality health, environmental impact, and energy requirements. In this case, BDT is a baghouse or high energy scrubber, although in some instances low energy scrubbers may achieve comparable performance. A standard based on low energy scrubbers for all sources covered by this NSPS would not reflect BDT or reduce emissions to a level achievable by BDT.

## *E. Monitoring Requirements*

Several commenters felt that the reasons used by EPA to justify continuous opacity monitoring and the associated recordkeeping and reporting are inadequate. Two of the commenters stated that broken bags in a collector are apparent without the need for a COMS and the increased capital and operating costs associated with it are not commensurate with the benefits. They felt that this requirement should apply only to major sources of pollution. Another commenter stated that his company's experience with these monitors has shown them to be expensive, difficult to install, very difficult to maintain, and inaccurate. He recommended dropping the requirements.

One commenter stated that the measured moisture content with the flue gases from their dryers vary from 7 to 22 percent by volume and during cold weather, plume moisture occurs with little or no plume stack separation. In addition, he stated that condensed water has appeared on the stack exterior in the vicinity of the sample ports at his plant. He felt these conditions were not conducive to in-stack opacity monitoring devices and, therefore, it would be more reasonable to require a certified observer to record opacities on a periodic basis. Another commenter felt that a COMS for an ESP controlling a dryer processing bentonite would continuously yield erroneous readings due to dripping water, falling clay-laden films, and clay film bridging. He cited problems his company has experienced with a bentonite dryer controlled by a dry ESP.

In regard to the commenters' concerns about the opacity monitoring requirements and the use of COMS's, section 114 of the CAA authorizes EPA to require such monitoring as is appropriate for enforcing NSPS. Also, Section 302(1) of the CAA defines "standards of performance" to include "any requirement relating to the operation and maintenance of a source to assure continuous emission reduction." The EPA's experience with control devices shows that regular maintenance, both remedial and preventive, greatly enhances control equipment efficiency. As stated in the preamble to the proposed standards (51 FR 15438; April 23, 1986), opacity monitoring can indicate when fabric filter bags are torn loose and when ESP electrodes are damaged or malfunctioning. The EPA's long-time experience with COMS's is that the devices operate accurately and with minimum downtime with regular and reasonable maintenance.

The EPA agrees with the commenters that a sudden increase in emissions resulting from either broken bags in a baghouse or a sudden failure of a baghouse or ESP would be immediately apparent and require attention by the source operator. However, the purpose of a COMS or other monitoring alternatives such as daily visible emissions observations is to alert industry and enforcement personnel of potential violations of the mass emission standard and to ensure the proper operation and maintenance of particulate control equipment on a continuous basis; i.e., to alert the operator to more subtle and gradual deterioration of the control device efficiency that occurs over time and results in increased emissions unless corrected. The emission reduction performance of air pollution control equipment is dependent upon the proper operation of many components of the control systems. While certain parameters can provide information on the status of certain key components, it is generally not possible to determine overall control device performance by monitoring parameters other than emissions. Without COMS's, operators have essentially no tools that they can use to monitor the continued performance of ESP's or fabric filter systems or to ensure that necessary maintenance is performed. The broken rapper welds and bag deterioration are examples of items that affect emissions and that cannot be evaluated or detected except with COMS's. The reporting of excursions as recorded by COMS's also helps State and local enforcement programs identify sources which are having repeated maintenance problems with their control devices. Since plant inspections and testing are infrequent, gradual deterioration will not be detected until a major failure occurs unless opacity monitoring is required.

The benefits of using a COMS are documented in a recent study conducted at Portland cement plants (Docket A–82–39, Item II–A–130). The study concludes that COMS's installed on control equipment at these plants contributed significantly to lower emissions. The emission reduction benefits are derived from: (1) Indicating when repair and maintenance of control equipment are needed; (2) signalling the need for a change in operating and maintenance practices for the process and the air pollution control device, and (3) quantifying emission reductions after the installation of a COMS. Factors which contributed to the lower emissions from the facilities were: (1) An increased sensitivity of the plant operating personnel that changes in process operating conditions and flue gas characteristics affect stack emissions; and (2) the awareness by plant operators that increased stack opacities below the opacity limit can be indications of excess particulate emissions.

Nevertheless, as the amount of emissions from an individual source decreases, the benefits of monitoring also decrease and at some point it is no longer reasonable to require a COMS or other monitoring alternative. Therefore, as a result of the comments received, EPA evaluated four alternative monitoring requirements: The use of a COMS; the reading of visible emissions daily or weekly by a certified visible emissions observer; and no monitoring requirements (Docket No. A–82–39, Item IV–B–1).

As a result of the analysis, the Administrator has determined that it is reasonable to require the installation of COMS's on all dryers and calciners of a certain type within an industry where the typical size unit of that type has potential emissions after NSPS control equal to or greater than 22.7 Mg/yr (25 tons/yr). For typical size units with emissions less than 22.7 Mg/yr (25 tons/yr) but greater than or equal to 10.0 Mg/yr (11 tons/yr), the Administrator has determined that owners or operators may perform daily visible emission observations in lieu of installing a COMS. The Administrator has also determined that typical units with emissions less than 10.0 Mg/yr (11 tons/yr) should be exempt from any monitoring requirements. Because of the variation in emissions after NSPS control for each size and type of calciner or dryer and for each industry, the monitoring requirements are based on the typical size of a particular type of calciner or dryer in each industry. The specific monitoring requirements for each type of dryer or calciner in each industry are presented in Section 60.734 of the final standards.

The following discussion summarizes the basis for the specific monitoring requirements for each type of dryer or calciner. The EPA used 22.7 Mg/yr (25 tons/yr) as the cutoff level for particulate matter (PM) emissions in determining which facilities would be required to install COMS's if they use dry control devices. In the prevention of significant deterioration (PSD) rules, EPA set *de minimis* levels of emissions for various pollutants. For PM emissions, the level was selected by evaluating the potential effect of different emissions levels on an area's air quality and how that related to the National Ambient Air Quality Standard (NAAQS) for PM. The analysis was based on a source's potential to emit after application of all appropriate Federal regulations such as NSPS. The significance level for PM emissions was set at 22.7 Mg/yr (25 tons/yr). Therefore, the Administrator has determined that it is beneficial and reasonable to require the installation of COMS's on all calciners and dryers of a certain type within an industry where the typical size unit of that type has emissions after NSPS control equal to or greater than 22.7 Mg/yr (25 tons/yr).

As stated previously, however, as the amount of emissions from an individual source decreases, the expected benefits of monitoring decrease and at some point it is no longer reasonable to require a COMS or other monitoring alternative. As a result, for calciners and dryers with emissions of less than 22.7 Mg/yr (25 tons/yr) after NSPS controls, the EPA assessed alternatives other than the installation of a COMS. These alternatives included daily or weekly visible emissions observations and no monitoring requirements. In assessing the reasonableness of performing daily versus weekly visible emission observations, it was determined that the cost of either one would be similar but would not deliver the same benefits. In both cases, employees of the affected plant would need to be formally certified as opacity readers twice per year. The costs associated with the certification would be incurred regardless of whether a daily or weekly monitoring requirement was imposed. The other costs associated with these alternatives are the annual cost of performing the observations and recording the results. The annual cost of weekly readings of visible emissions would be reduced somewhat, but because of the fixed cost of certification, would cost approximately 40 percent of the cost of doing daily observations. Moreover, a daily observation program would be more effective at identifying gradual deterioration of the control device efficiency and allowing a plant operator time to correct the problem prior to a complete failure of the device. A weekly observation program would not identify the gradual deterioration of the control device as quickly and, in some cases, a failure of the control device could occur between two weekly observations. Because requiring daily observations would yield substantially greater benefits than weekly observations and the cost difference was considered reasonable, the alternative of weekly observations was considered inferior for the sources with less than 22.7 Mg/yr (25 tons/yr) of emissions after NSPS control. Therefore, for typical size units with emissions less than 22.7 Mg/yr (25 tons/yr), but greater than or equal to 10.0 Mg/yr (11 tons/yr), the regulation has been revised to allow the owner or operator to perform daily visible emission observations in lieu of installing a COMS.

On the other hand, the Administrator has determined that typical size units with emissions less than 10.0 Mg/yr (11 tons/yr) should be exempt from any monitoring requirements. In making this determination, consideration was given to the size of the source in terms of the emissions after NSPS control is applied. In addition, the benefits associated with monitoring, such as identifying sources that are having control equipment problems for the appropriate enforcement agency so corrective action can be taken, were considered. For very small sources with small control devices, the benefits associated with a COMS or daily visible emission observations, in terms of reducing excess emissions, are smaller in comparison to larger sources. The cost of daily visible emission observations as a percent of the annualized cost of operating the control equipment was also considered. For these reasons, typical size units with emission less than 10.0 Mg/yr (11 tons/yr) are exempt from any monitoring requirements.

In regard to concerns raised about moisture on the exterior of a stack interfering with the operation or accuracy of a COMS, EPA does not believe this condition will have any effect on the measurement of opacity in the stack and the commenter had no data to support this claim. However, if high moisture content in the stack or other situations such as falling clay-laden films or clay-film bridging are interfering with the performance of a COMS, the owner or operator may petition the Administrator to approve an alternative monitoring procedure, requirement, or location according to 40 CFR 60.13(i).

## VII. Administrative Requirements

### *A. Docket*

The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can intelligently and effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards and EPA responses to significant comments, the contents of the docket, except for interagency review materials, will serve as the record in case of judicial review (section 307(d)(7)(A)).

### *B. Paperwork Reduction Act*

The information collection requirements contained in this rule have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and have been assigned OMB control number 2063–______.

The public reporting burden for this collection of information is estimated to average 492 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch (PM-223), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Paperwork Reduction Project (2063–______) Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

### *C. Executive Order 12291*

Under Executive Order 12291, EPA is required to judge whether a regulation is a "major rule" and, therefore, subject to certain requirements of the Order. The EPA has determined that the regulation would result in none of the adverse economic effects set forth in Section 1 of the Order as grounds for finding a regulation to be major. The total nationwide incremental annualized costs in the fifth year after the standards would go into effect would range from $0.7 to $1.0 million, less than the $100 million established as the first criterion for a major regulation in the Order. The maximum estimated price increase of 1.75 percent associated with the standards would not be considered a "major increase in costs or prices" specified as the second criterion in the Order. The economic analysis of the standard's effect on the industry did not indicate any significant adverse effects on competition, investment, productivity, employment, innovation, or the ability of U.S. firms to compete with foreign firms which is the third criterion in the Order.

This regulation was submitted to OMB for review as required by Executive Order 12291. Any written comments from OMB to EPA and any EPA response to those comments are available for public inspection in Docket No. A-82-39, at EPA's Air Docket Section listed under the **ADDRESSES** section.

### *D. Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*) requires EPA to consider potentially adverse impacts of regulations on small business "entities." If a preliminary analysis indicates that a regulation would have a significant economic impact on 20 percent or more of small entities, then an RFA must be prepared. The EPA definition of significant effect involves four tests: (1) Prices for small entities rise 5 percent or more, assuming costs are passed on to consumers; or (2) annualized investment costs for pollution control are greater than control costs as a percentage of sales for large entities; or (3) control costs as a percentage of sales for small entities are 10 percent greater than control costs as a percentage of sales for large entities; or (4) the requirements of the regulation are likely to result in closures of small entities.

The Act's definition of "small business" is based on definitions developed by the Small Business Administration (SBA). The SBA's definitions are listed in 13 CFR part 121 by Standard Industrial Classification (SIC) categories. For most of the mineral dryer and calciner industries, the SBA defines a small business as one with 500 or fewer employees (the two exceptions are gypsum and titanium dioxide, each of which is 1,000 employees). Most of the mineral dryer and calciner industries do include small businesses according to the SBA definiton. The regulation would apply to all businesses (small and large) in the 17 industries, and as a result the test of a substantial number of small businesses is met.

Although there are a substantial number of small businesses, the measure of significant effects is not likely to be met. The absolute level of the percent product price increases is quite small for most of the industries, typically about 0.5 percent or less. Thus, the first test is never triggered. Neither are the second or fourth tests triggered. The third test is occasionally triggered, but the absolute sizes of the numbers are so small as to make this test inapplicable. For example, in the diatomite industry, a small flash dryer (4 Mg/h) has control costs as a percentage of sales that are 23 percent higher than the corresponding percentage for a larger flash dryer (11 Mg/h). But the absolute levels of these two percentages are 0.18 percent and 0.13 percent, and the 23 percent difference between them is virtually meaningless. Thus, because the absolute levels of the percent product price increases are quite small for most of the industries, and because the tests are presented as guidelines, as interpretation of he spirit and purpose of the Act indicates that the industries do not exceed the Act's states. Because these standards impose no adverse economic impacts, Regulatory Flexibility Analysis has not be conducted.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities because the impact of the final rule is not significant.

*E. Miscellaneous*

The effective date of this regulation is September 28, 1992. Section 111 of the Clean Air Act provides that NSPS or revisions thereof become effective upon promulgation and apply to affected facilities, the construction or modification of which was commenced after the date of proposal, April 23, 1986.

As described in section 111, the promulgation of these standards was preceded by the Administrator's determination (40 CFR 60.16, 44 FR 49222, dated August 21, 1979) that calciners and dryers in use in the mineral processing industries contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. In accordance with section 117 of the Act, publication of these promulgated standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

Section 317 of the Clean Air Act requires the Administrator to prepare an economic impact assessment for any NSPS promulgated under section 111(b) of the Act. An economic impact assessment was prepared for this regulation and for other regulatory alternatives. All aspects of the assessment were considered in determining BDT. The economic impact assessment is included in the BID for the proposed standards.

This regulation will be reviewed 4 years from the date of promulgation as required by the Clean Air Act. This review will include an assessment of such factors as the need for integration with other programs, the existence of alternative methods, enforceability, improvements in emission control technology, and recordkeeping and reporting requirements.

**List of Subjects in 40 CFR Part 60**

Air pollution control, Incorporation by reference, Intergovernmental relations, Metallic minerals, Nonmetallic minerals, Reporting and recordkeeping requirements.

Dated: September 19, 1992.

William K. Reilly,

*Administrator.*

40 CFR Part 60 is amended as follows:

## PART 60—[AMENDED]

1. The authority citation for part 60 continues to read as follows:

Authority: Sections 101, 111, 114, 116, 301, Clean Air Act as amended (42 U.S.C. 7401, 7411, 7414, 7416, 7601).

2. By adding a new subpart UUU consisting of §§ 60.730 through 60.737 to read as follows:

**Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries**

Sec.
60.730 Applicability and designation of affected facility.
60.731 Definitions.
60.732 Standards for particulate matter.
60.733 Reconstruction.
60.734 Monitoring of emissions and operations.
60.735 Recordkeeping and reporting requirements.
60.736 Test methods and procedures.
60.737 Delegation of authority.

## Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

### § 60.730 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each calciner and dryer at a mineral processing plant. Feed and product conveyors are not considered part of the affected facility. For the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered.

(b) An affected facility that is subject to the provisions of subpart LL, Metallic Mineral Processing Plants, is not subject to the provisions of this subpart. Also, the following processes and process units used at mineral processing plants are not subject to the provisions of this subpart: vertical shaft kilns in the magnesium compounds industry; the chlorination-oxidation process in the titanium dioxide industry; coating kilns, mixers, and aerators in the roofing granules industry; and tunnel kilns, tunnel dryers, apron dryers, and grinding equipment that also dries the process material used in any of the 17 mineral industries (as defined in § 60.731, "Mineral processing plant").

(c) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after April 23, 1986, is subject to the requirements of this subpart.

### § 60.731 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

*Calciner* means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and multiple hearth furnaces.

*Control device* means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities.

*Dryer* means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

*Installed in series* means a calciner and dryer installed such that the exhaust gases from one flow through the other and then the combined exhaust gases are discharged to the atmosphere.

*Mineral processing plant* means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

### § 60.732 Standards for particulate matter.

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that:

(a) Contains particulate matter in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057 g/dscm for dryers; and

(b) Exhibits greater than 10 percent opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.

### § 60.733 Reconstruction.

The cost of replacement of equipment subject to high temperatures and abrasion on processing equipment shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital cost that would be required to construct a comparable new facility" under § 60.15. Calciner and dryer equipment subject to high temperatures and abrasion are: end seals, flights, and refractory lining.

### § 60.734 Monitoring of emissions and operations.

(a) With the exception of the process units described in paragraphs (b), (c), and (d) of this section, the owner or operator of an affected facility subject to the provisions of this subpart who uses a dry control device to comply with the mass emission standard shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device.

(b) In lieu of a continuous opacity monitoring system, the owner or operator of a ball clay vibrating grate dryer, a bentonite rotary dryer, a diatomite flash dryer, a diatomite rotary calciner, a feldspar rotary dryer, a fire clay rotary dryer, an industrial sand fluid bed dryer, a kaolin rotary calciner, a perlite rotary dryer, a roofing granules fluid bed dryer, a roofing granules rotary dryer, a talc rotary calciner, a titanium dioxide spray dryer, a titanium dioxide fluid bed dryer, a vermiculite fluid bed dryer, or a vermiculite rotary dryer who uses a dry control device may have a certified visible emissions observer measure and record three 6-minute averages of the opacity of visible emissions to the atmosphere each day of operation in accordance with Method 9 of appendix A of part 60.

(c) The owner or operator of a ball clay rotary dryer, a diatomite rotary dryer, a feldspar fluid bed dryer, a fuller's earth rotary dryer, a gypsum rotary dryer, a gypsum flash calciner, gypsum kettle calciner, an industrial sand rotary dryer, a kaolin rotary dryer, a kaolin multiple hearth furnace, a perlite expansion furnace, a talc flash dryer, a talc rotary dryer, a titanium dioxide direct or indirect rotary dryer or a vermiculite expansion furnace who uses a dry control device is exempt from the monitoring requirements of this section.

(d) The owner or operator of an affected facility subject to the provisions of this subpart who uses a wet scrubber to comply with the mass emission standard for any affected facility shall install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. The pressure loss monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

(Approved by the Office of Management and Budget under control number 2060–A999)

### § 60.735 Recordkeeping and reporting requirements.

(a) Records of the measurements required in § 60.734 of this subpart shall be retained for at least 2 years.

(b) Each owner or operator who uses a wet scrubber to comply with § 60.732 shall determine and record once each day, from the recordings of the monitoring devices in § 60.734(d), and arithmetic average over a 2-hour period of both the change in pressure of the gas stream across the scrubber and the flowrate of the scrubbing liquid.

(c) Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by § 60.734 of this subpart. For the purpose of these reports, exceedances are defined as follows:

(1) All 6-minute periods during which the average opacity from dry control devices is greater than 10 percent; or

(2) Any daily 2-hour average of the wet scrubber pressure drop determined as described in § 60.735(b) that is within 10 percent of the average value recorded according to § 60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard; or

(3) Each daily wet scrubber liquid flow rate recorded as described in § 60.735(b) that is within 20 percent of the average value recorded according to § 60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard.

(d) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section provided that they comply with the requirements established by the State.

(Approved by the Office of Management and Budget under control number 2060–A999)

### § 60.736 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.732 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions.

(c) During the initial performance test of a wet scrubber, the owner or operator shall use the monitoring devices of § 60.734(d) to determine the average change in pressure of the gas stream across the scrubber and the average flowrate of the scrubber liquid during each of the particulate matter runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of § 60.735(c).

### § 60.737 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: No restrictions.

[FR Doc. 92–23450 Filed 9–25–92; 8:45 am]

BILLING CODE 6560–50–M

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## FEDERAL MARITIME COMMISSION

## 46 CFR Parts 502, 514, and 550

[Docket No. 92-36]

## Reduction of Notice Requirement for Tariff Increases in the Domestic Offshore Trades; Exemption Under Section 35 of the Shipping Act, 1916

**AGENCY:** Federal Maritime Commission.

1 T.CF

B:

# H. B. 4221

(By Delegates Gallagher, Douglas, Compton, Huntwork, Burk and Faircloth)

(Introduced January 31, 1994; referred to the Committee on the Judiciary.)

A BILL to amend and reenact section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, relating to authorizing the air pollution control commission to promulgate legislative rules relating to standards of performance for new stationary sources.

**Be it enacted by the Legislature of West Virginia:**

That section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, be amended and reenacted to read as follows:

## ARTICLE 3. AUTHORIZATION FOR DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES TO PROMULGATE LEGISLATIVE RULES.

### §64-3-1. Air pollution control commission.

(a) The legislative rules filed in the state register on the thirteenth day of August, one thousand nine hundred eighty-two,

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relating to the air pollution control commission (series VII), are authorized.

(b) The legislative rules filed in the state register on the thirteenth day of August, one thousand nine hundred eighty-two, relating to the air pollution control commission (series XIX), are authorized.

(c) The legislative rules filed in the state register on the sixteenth day of November, one thousand nine hundred eighty-three, relating to the air pollution control commission (emission standards for hazardous air pollutants) (series XV), are authorized.

(d) The legislative rules filed in the state register on the sixteenth day of November, one thousand nine hundred eighty-three, relating to the air pollution control commission (standards of performance for new stationary sources) (series XVI), are authorized.

(e) The legislative rules filed in the state register on the sixth day of January, one thousand nine hundred eighty-four, relating to the air pollution control commission (to prevent and control air pollution from hazardous waste treatment, storage or disposal facilities)(series XXV), are authorized with the amendments set forth below:

Page 3, §1.06, change the § title from "Enforcement" to "Procedure"; place an "(a)" in front of the existing paragraph and add the following:

"(b) Permit applications filed pursuant to this regulation shall be processed in accordance with the permitting procedures as set forth in code §20-5E of this regulation. Permit procedures set forth in code §16-20 and any other regulation of this commission are not applicable to any permit application filed pursuant to this regulation."

Such rules shall also include a section which shall read as follows:

"The commission shall report to the legislative rule-making review committee as required by that committee, but in no event later than the first day of the regular session of the Legislature in the year one thousand nine hundred eighty-five. Such report shall include information regarding the commission's data gathering efforts, the development of compliance programs, the progress in implementation, and such other matters as the committee may require, pertaining to the regulations hereby authorized."

(f) The legislative rules filed in the state register on the ninth day of January, one thousand nine hundred eighty-four, relating to the air pollution control commission (permits for construction and modification of stationary sources of air pollution for the prevention of significant deterioration) (series XIV), are authorized.

(g) The legislative rules filed in the state register on the thirtieth day of December, one thousand nine hundred eighty-eight, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of February, one thousand nine hundred eighty-nine, relating to the air pollution control commission (prevention and control of air pollution from hazardous waste treatment, storage or disposal facilities), are authorized.

(h) The legislative rules filed in the state register on the thirtieth day of December, one thousand nine hundred eighty-eight, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of February, one thousand nine hundred eighty-nine, relating to the air pollution control commission (good engineering practice as applicable to stack heights), are authorized.

(i) The legislative rules filed in the state register on the thirtieth day of December, one thousand nine hundred eighty-eight, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of February, one thousand nine hundred eighty-nine, relating to the air pollution control commission (TP-2, compliance test procedures for regulation 2 -- to prevent and control particulate air pollution from combustion of fuel in indirect heat exchangers), are authorized.

(j) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (ambient air quality standards for sulfur oxides and particulate matter), are authorized.

(k) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (prevention of air pollution emergency episodes), are authorized.

(l) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (permits for construction and major modification of major stationary sources of air pollution for the prevention of significant deterioration), are authorized.

(m) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, relating to the air pollution control commission (standards of performance for new stationary sources), are authorized.

(n) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, relating to the air pollution control commission (emission standards for hazardous air pollutants), are authorized.

(o) The legislative rules filed in the state register on the sixteenth day of October, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (prevention and control of emissions of toxic air pollutants), are authorized.

(p) The legislative rules filed in the state register on the tenth day of August, one thousand nine hundred ninety, relating to the air pollution control commission (prevention and control of air pollution from the emission of volatile organic compounds from bulk gasoline terminals), are authorized.

(q) The legislative rules filed in the state register on the thirteenth day of August, one thousand nine hundred ninety, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the fifteenth day of November, one thousand nine hundred ninety, relating to the air pollution control commission (air quality management fee program), are authorized.

(r) The legislative rules filed in the state register on the tenth day of August, one thousand nine hundred ninety, relating to the air pollution control commission (prevention and control of air pollution from the emission of volatile organic compounds from the storage of petroleum liquids in fixed roof tanks), are authorized.

(s) The legislative rules filed in the state register on the tenth day of August, one thousand nine hundred ninety, relating to the air pollution control commission (prevention and control of air pollution from the emission of volatile organic compounds from petroleum refinery sources), are authorized.

(t) The legislative rules filed in the state register on the eighteenth day of December, one thousand nine hundred ninety-one, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the fifteenth day of December, one thousand nine hundred ninety-two, relating to the air pollution control commission (regulations to prevent and control air pollution from the emission of volatile organic compounds), are authorized with the amendments set forth below:

"On page 26, subsection §45-21-9.2, by striking all of §45-21-9.2 and inserting in lieu thereof a new §45-21-9.2, to read as follows:

"9.2 Registration. -- Within thirty (30) days after May 31, 1993, all persons owning and/or operating a source subject to this regulation and not previously registered shall have registered such source(s) with the chief: **Provided,** That on a case-by-case basis, the chief may extend the 30-day period for the registration of sources to allow sources up to one hundred eighty (180) days after May 31, 1993 to register. The information required for registration shall be determined and provided in the manner specified by the chief. Registration forms shall be requested from the chief by the owner or operator of such source(s)."

And,

"On page fifty-six, subsection §45-21-20.5a by striking out all of line "a" and its equivalent column and inserting in lieu thereof the words "a = Surface area coated per day in terms of square meters divided by 100 or surface area coated per day in terms of square feet divided by 1000."

And,

"On page one hundred eighty-three, subsection §45-21-40.2 after the words "control technology (RACT) in section" by striking the numbers "2.57." and inserting in lieu thereof the numbers "2.60."

(u) The legislative rules filed in the state register on the eighteenth day of September, one thousand nine hundred ninety-two, relating to the air pollution control commission (confidential information), are authorized.

(v) The legislative rules filed in the state register on the eighteenth day of September, one thousand nine hundred ninety-two, relating to the air pollution control commission (serious and minor violations of applicable rules), are authorized.

(w) The legislative rules filed in the state register on the thirty-first day of August, one thousand nine hundred ninety-two, relating to the air pollution control commission (permits for construction and major modification of major stationary sources of air pollution for the prevention of significant deterioration), are authorized with the amendments set forth below:

"On page fourteen, subsection §45.13.6.5 after the word "[W]ithin" by striking the word "twelve(12)" and inserting in lieu thereof the word "six(6)".

(x) The legislative rules filed in the state register on the twenty-eighth day of August, one thousand nine hundred ninety-two, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the nineteenth day of February, one thousand nine hundred ninety-three, relating to the air pollution control commission (regulations to prevent and control air pollution from the operation of coal preparation plants and coal handling operations), are authorized.

(y) The legislative rules filed in the state register on the thirty-first day of August, one thousand nine hundred ninety-two, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the nineteenth day of February, one thousand nine hundred ninety-three, relating to the air pollution control commission (requirements for pre-construction review, determination of emission offsets for proposed new or modified stationary sources of air pollutants and emission trading for intrasource pollutants), are authorized with amendments set forth below:

"On page twenty-one, subsection §45.19.12.5 after the word "[W]ithin" by striking the word "twelve (12)" and inserting in lieu thereof the word "six(6)".

(z) The legislative rules filed in the state register on the twenty-eighth day of August, one thousand nine hundred ninety-two, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the nineteenth day of February, one thousand nine hundred ninety-three, relating to the air pollution control commission (requiring the submission of emission statements for volatile organic compound emissions and oxides of nitrogen emissions), are authorized with the amendments set forth below:

"On page four, section 2.27. after the words 'VOC or' by striking out the words '100 tons per year or more of'".

(aa) The legislative rules filed in the state register on the thirteenth day of August, one thousand nine hundred ninety-three, relating to the air pollution control commission (standards of performance for new stationary sources) are authorized.

NOTE: The purpose of this bill is to authorize the Air Pollution Control Commission to promulgate legislative rules relating to standards of performance for new stationary sources.

Strike-throughs indicate language that would be stricken from the present law, and underscoring indicates new language that would be added.

# SENATE BILL NO. 151

(By Senators Anderson, Grubb, Macnaughtan and Minard)

[Introduced January 31, 1994; referred to the Committee on EIM

]

Judiciary

A BILL to amend and reenact section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, relating to authorizing the air pollution control commission to promulgate legislative rules relating to standards of performance for new stationary sources.

**Be it enacted by the Legislature of West Virginia:**

That section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, be amended and reenacted to read as follows:

## ARTICLE 3. AUTHORIZATION FOR DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES TO PROMULGATE LEGISLATIVE RULES.

### §64-3-1. Air pollution control commission.

(a) The legislative rules filed in the state register on the thirteenth day of August, one thousand nine hundred eighty-two, relating to the air pollution control commission (series VII), are authorized.

(b) The legislative rules filed in the state register on the thirteenth day of August, one thousand nine hundred eighty-two, relating to the air pollution control commission (series XIX), are authorized.

(c) The legislative rules filed in the state register on the sixteenth day of November, one thousand nine hundred eighty-three, relating to the air pollution control commission (emission standards for hazardous air pollutants) (series XV), are authorized.

(d) The legislative rules filed in the state register on the sixteenth day of November, one thousand nine hundred eighty-three, relating to the air pollution control commission (standards of performance for new stationary sources) (series XVI), are authorized.

(e) The legislative rules filed in the state register on the sixth day of January, one thousand nine hundred eighty-four, relating to the air pollution control commission (to prevent and control air pollution from hazardous waste treatment, storage or disposal facilities)(series XXV), are authorized with the amendments set forth below:

Page 3, §1.06, change the § title from "Enforcement" to "Procedure"; place an "(a)" in front of the existing paragraph and add the following:

"(b) Permit applications filed pursuant to this regulation shall be processed in accordance with the permitting procedures as set forth in code §20-5E of this regulation. Permit procedures set forth in code §16-20 and any other regulation of this commission are not applicable to any permit application filed pursuant to this regulation."

Such rules shall also include a section which shall read as follows:

"The commission shall report to the legislative rule-making review committee as required by that committee, but in no event later than the first day of the regular session of the Legislature in the year one thousand nine hundred eighty-five. Such report shall include information regarding the commission's data gathering efforts, the development of compliance programs, the progress in implementation, and such other matters as the committee may require, pertaining to the regulations hereby authorized."

(f) The legislative rules filed in the state register on the ninth day of January, one thousand nine hundred eighty-four, relating to the air pollution control commission (permits for construction and modification of stationary sources of air pollution for the prevention of significant deterioration) (series XIV), are authorized.

(g) The legislative rules filed in the state register on the thirtieth day of December, one thousand nine hundred eighty-eight, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of February, one thousand nine hundred eighty-nine, relating to the air pollution control commission (prevention and control of air pollution from hazardous waste treatment, storage or disposal facilities), are authorized.

(h) The legislative rules filed in the state register on the thirtieth day of December, one thousand nine hundred eighty-eight, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of February, one thousand nine hundred eighty-nine, relating to the air pollution control commission (good engineering practice as applicable to stack heights), are authorized.

(i) The legislative rules filed in the state register on the thirtieth day of December, one thousand nine hundred eighty-eight, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of February, one thousand nine hundred eighty-nine, relating to the air pollution control commission (TP-2, compliance test procedures for regulation 2 -- to prevent and control particulate air pollution from combustion of fuel in indirect heat exchangers), are authorized.

(j) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (ambient air quality standards for sulfur oxides and particulate matter), are authorized.

(k) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (prevention of air pollution emergency episodes), are authorized.

(l) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (permits for construction and major modification of major stationary sources of air pollution for the prevention of significant deterioration), are authorized.

(m) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, relating to the air pollution control commission (standards of performance for new stationary sources), are authorized.

(n) The legislative rules filed in the state register on the sixth day of September, one thousand nine hundred eighty-nine, relating to the air pollution control commission (emission standards for hazardous air pollutants), are authorized.

(o) The legislative rules filed in the state register on the sixteenth day of October, one thousand nine hundred eighty-nine, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the tenth day of January, one thousand nine hundred ninety, relating to the air pollution control commission (prevention and control of emissions of toxic air pollutants), are authorized.

(p) The legislative rules filed in the state register on the tenth day of August, one thousand nine hundred ninety, relating to the air pollution control commission (prevention and control of air pollution from the emission of volatile organic compounds from bulk gasoline terminals), are authorized.

(q) The legislative rules filed in the state register on the thirteenth day of August, one thousand nine hundred ninety, modified by the air pollution control commission to meet the objections of the legislative rule-making review committee and refiled in the state register on the fifteenth day of November, one thousand nine hundred ninety, relating to the air pollution control commission (air quality management fee program), are authorized.

(r) The legislative rules filed in the state register on the tenth day of August, one thousand nine hundred ninety, relating to the air pollution control commission (prevention and control of air pollution from the emission of volatile organic compounds from the storage of petroleum liquids in fixed roof tanks), are authorized.

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NOTE: The purpose of this bill is to authorize the Air Pollution Control Commission to promulgate legislative rules relating to standards of performance for new stationary sources.

Strike-throughs indicate language that would be stricken from the present law, and underscoring indicates new language that would be added.

KEN HECHLER
Secretary of State

MARY P. RATLIFF
Deputy Secretary of State

A. RENEE COE
Deputy Secretary of State

CATHERINE FREROTTE
Executive Assistant

Telephone: (304) 558-6000
Corporations: (304) 558-8000

**STATE OF WEST VIRGINIA**

**SECRETARY OF STATE**
Building 1, Suite 157-K
1900 Kanawha Blvd., East
Charleston, WV 25305-0770

WILLIAM H. HARRINGTON
Chief of Staff

JUDY COOPER
Director, Administrative Law

DONALD R. WILKES
Director, Corporations

(Plus all the volunteer
help we can get)

FAX: (304) 558-0900

March 18, 1994

G. Dale Farley
Air Pollution Control Comm.
1558 Washington St. East
Charleston, WV 25311-2599

**SB 1005** authorizing, **Title 45, Series 16,** Standards of Performance for New Stationary Sources , passed the Legislature on **March 16, 1994 .** It is now awaiting the Governor's signature.

You have sixty (60) days after the Governor signs SB 1005, to final file the legislative rule with the Secretary of State's office. To final file your legislative rule, fill in the blanks on the enclosed form #6, the "Final Filing" form and file the form with our office with a promulgation history of the rule. Authorization for your legislative rule is cited in **SB 1005** section **64-3-1(ee).** The agency may set the effective date of the legislative rule up to ninety (90) days from the date the legislative rule is final filed with the Secretary of State's office. Please have an authorized signature on the bottom line.

> ***IMPORTANT: IF YOUR AGENCY HAS COMPLETED THE LEGISLATIVE RULE ON A WORD PERFECT OR WORD PERFECT COMPATIBLE COMPUTER SYSTEM THAT USES A 3 1/2" OR 5 1/4" DISK, **YOU MUST SUBMIT A CLEAN COPY, WITH ALL UNDERLINING AND STRIKE-THROUGHS TAKEN OUT,** TO OUR OFFICE WHEN FINAL FILING THE RULE. STATE ON THE DISK THE FORMAT THE RULE IS IN AND THE TITLE IT IS FILED UNDER. THIS WILL MAKE IT QUICKER FOR US TO ENTER YOUR RULES ON THE LEGISLATIVE DATA BASE. REMEMBER THE TEXT OF THE COMPUTER FILED RULE MUST BE IDENTICAL - WORD FOR WORD, COMMA FOR COMMA, **WITH ALL UNDERLINING AND STRIKE-THROUGHS TAKEN OUT,** AS THE HARD COPY AUTHORIZED BY THE LEGISLATURE.

After the final rule is entered into the legislative data base, the rule will be sent to the agency for review and proofing. Following confirmation or corrections, as the case may be, the Secretary of State shall submit to the agency a final version of the rule for their records.

If you have any questions or need any assistance, please do not hesitate to call our office.

Thank You
Administrative Law Division

KEN HECHLER
Secretary of State
MARY P. RATLIFF
Deputy Secretary of State
A. RENEE COE
Deputy Secretary of State
CATHERINE FREROTTE
Executive Assistant
Telephone: (304) 558-6000
Corporations: (304) 558-8000

STATE OF WEST VIRGINIA
SECRETARY OF STATE
Building 1, Suite 157-K
1900 Kanawha Blvd., East
Charleston, WV 25305-0770

WILLIAM H. HARRINGTON
Chief of Staff
JUDY COOPER
Director, Administrative Law
DONALD R. WILKES
Director, Corporations
(Plus all the volunteer
help we can get)
FAX: (304) 558-0900

TO: Tammy Mowrer

AGENCY: APCC

FROM: JUDY COOPER, DIRECTOR, ADMINISTRATIVE LAW DIVISION

DATE: July 1, 1994

THE ATTACHED RULE FILED BY YOUR AGENCY HAS BEEN ENTERED INTO OUR COMPUTER SYSTEM. PLEASE REVIEW, PROOF AND RETURN IT WITH ANY CORRECTIONS. IF THERE ARE NO CORRECTIONS, PLEASE SIGN THIS MEMO AND RETURN IT TO THIS OFFICE. YOU WILL BE SENT A FINAL VERSION OF THE RULE FOR YOUR RECORDS.

PLEASE RETURN EITHER THE CORRECTED RULE OR THIS FORM WITHIN TEN (10) WORKING DAYS OF THE DATE YOU RECEIVED THIS REQUEST. CALL IF YOU HAVE ANY QUESTIONS.

SERIES: 16 TITLE: 45 APCC

* THE ATTACHED RULE HAS BEEN REVIEWED AND IS CORRECT.

SIGNED: ____

TITLE OF PERSON SIGNING: ____

DATE: ____

***************************************

X * THE ATTACHED RULE HAS BEEN REVIEWED AND NEEDS CORRECTING. THE CORRECTIONS HAVE BEEN MARKED.

SIGNED: Tamma S. Mowrer

TITLE OF PERSON SIGNING: Administrative Secretary

DATE: July 19, 1994

NOTE: IF YOU ARE NOT THE PERSON WHO HANDLES THIS RULE, PLEASE FORWARD TO THE CORRECT PERSON.