

Item 7 of license application requires the licensee to follow Appendix B of Regulatory Guide 10.8 (Rev. 1). Appendix B of Regulatory Guide 10.8 requires the Radiation Safety Committee (Medical Isotopes Committee) to meet not less than once in each calendar quarter and to maintain written records of all committee meetings, actions, recommendations, and decisions.

Contrary to the above, on or before January 13, 1987, a written record was fabricated to document a Radiation Safety Committee meeting that, in fact, did not take place; and on January 13, 1987, this fabricated record was presented to an NRC inspector for review.

II. Summary of Licensee Response

The licensee denied that a written record was fabricated to document that a Radiation Safety Committee (RSC) meeting took place in 1986 and that the record was presented to the NRC inspector with the intent to defraud. The licensee stated that it could find no other copy of the 1985 RSC minutes, and, because the body of the minutes states 1985, the 1985 minutes were filed in that manner. The licensee stated that its Administrator had the "impression" that the inspector had been authorized to look through the licensee's file cabinets and may have found the document there, and that the claim that the document was presented to the inspector to defraud does not agree with the facts. The licensee acknowledged that required quarter RSC meetings were not held during the two-year period ending in January 1987, and indicated that it was not reasonable to believe that a licensee representative would have offered documentation to indicate that one meeting out of this period was held in the hope of making the situation appear any better when its officers and employees admitted all along that there were no such meetings. The licensee acknowledged that it was odd that the document reviewed by the inspector had two items deleted with white correction fluid ("whited out"), and that contradictory dates appeared on the document.

III. NRC Evaluation of Licensee Response

During the NRC inspection conducted on January 13, 1987, the inspectors requested that the nuclear medicine physician and/or the chief nuclear medicine technologist produce the minutes of the most recent RSC meeting. During the investigation conducted by the NRC Office of Investigations (OI), one inspector testified that, after a brief absence, the nuclear medicine physician

provided him with a document purported to be a copy of the requested minutes. The document contained alterations and discrepancies, including a discrepancy in the date of the meeting and a deletion of the name of one of the attendees. Contrary to the statement in the licensee's response, the inspectors did not find the document in the licensee's files.

The licensee indicated both during the Enforcement Conference held in the NRC Region II office on March 10, 1989, and in its May 24, 1989, response that the document which was purported to be a copy of the requested minutes appears to have been altered. The OI investigation did not conclusively establish who actually altered the September 13, 1985, minutes to represent that a meeting had been held on September 13, 1986. However, a review of the pertinent records clearly established that an RSC meeting was convened on September 13, 1985, rather than September 13, 1986, as indicated in the minutes, and that the altered document was proffered to the NRC inspector. Based upon this evidence, NRC has concluded that an individual affiliated with the hospital altered or directed the alteration of a copy of the minutes for the September 13, 1985 RSC meeting, and, when the inspector requested to see the minutes of the most recent RSC meeting held, the altered document was presented to the inspector as the official minutes of a September 13, 1986 meeting that was, in fact, not held.

NRC Conclusion

The NRC staff has carefully reviewed the licensee's response and has concluded that the violation occurred as stated in the Notice and that the licensee has not provided an adequate basis for withdrawal of the violation or retraction of the civil penalty. Therefore, the civil penalty in the amount of \$2,500 should be imposed.

[FR Doc. 89-21285 Filed 9-8-89; 8:45 am]

BILLING CODE 7590-01-M

DEPARTMENT OF STATE

[Public Notice CM-8/1304]

Shipping Coordinating Committee; Subcommittee on Ocean Dumping; Meeting

The Subcommittee on Ocean Dumping of the Shipping Coordinating Committee will hold an open meeting on October 19, 1989 to review agenda items and preliminary U.S. positions for the Twelfth Consultative Meeting of

Contracting Parties to the London Dumping Convention.

The meeting will be held at 10:00 a.m. at the Environmental Protection Agency, Fairchild Building, 499 South Capitol Street, SW., Washington D.C. 20003 in the Conference Room of the Office of Marine and Estuarine Protection, on the 8th floor. Members of the public are invited and are free to attend up to the seating capacity of the room.

For further information, please contact Dr. Al Wastler, Office of Marine Protection, Telephone (202) 475-6741.

Dated: August 24, 1989

Thomas J. Wajda,
Chairman, Shipping Coordinating Committee.
[FR Doc. 89-21293 Filed 9-8-89; 8:45 am]

BILLING CODE 4710-09-M

DEPARTMENT OF TRANSPORTATION

Coast Guard

[GD 89-070]

National Offshore Safety Advisory Committee; Request for Applications

AGENCY: Coast Guard, DOT.

ACTION: Request for applications.

SUMMARY: The U.S. Coast Guard is seeking applicants to fill one vacancy on the National Offshore Safety Advisory Committee (NOSAC). The committee acts in advisory capacity to the Commandant of the Coast Guard on matters relating to the offshore mineral and energy industry.

The vacancy is for an individual representing a company engaged in the production of petroleum. It is expected that the member would serve for a term of no more than three years.

To achieve the balance of membership required by the Federal Advisory Committee Act, the Coast Guard is especially interested in receiving applications from minorities and women.

DATE: Applications should be received not later than October 11, 1989.

ADDRESS: Persons interested in applying should write to Commandant (G-MP-2), U.S. Coast Guard Headquarters, 2100 Second Street, SW., Washington, DC 20593-0001 or call (202) 267-1406.

FOR FURTHER INFORMATION CONTACT: Mr. Gene Hammel, Executive Director, National Offshore Safety Advisory Committee, U.S. Coast Guard Headquarters (G-MP-2), 2100 Second Street SW., Washington, DC 20593-0001, (202) 267-1406.

Dated: August 31, 1989.

M.J. Schiro,

Captain, U.S. Coast Guard, Safety, Security
and Environmental Protection.

[FR Doc. 89-21235 Filed 9-8-89; 8:45 am]

BILLING CODE 4910-14-M

Federal Aviation Administration

Air Traffic Control Tower, Martha's Vineyard, MA; Commissioning

Notice is hereby given that on October 1, 1989, the airport traffic control tower at Martha's Vineyard Airport, Martha's Vineyard, Massachusetts, will be commissioned. Tower hours of operation will be published in the Airport-Facility Directory. The designated facility identification for the airport control tower will be: Vineyard Tower.

Communications to the tower should be directed to: Midwest ATC, Martha's Vineyard Airport, RFD, Box 880, Vineyard Haven, Massachusetts 02568.

(49 U.S.C. 1348 and 1354(a); 49 U.S.C. 106(g) (Revised Pub. L. 97-449 (January 12, 1983)))

Issued in Burlington, Massachusetts, on August 29, 1989.

James I. Lucas,

Manager, Air Traffic Division, New England Region.

[FR Doc. 89-21247 Filed 9-8-89; 8:45 am]

BILLING CODE 4910-13-M

Federal Highway Administration

Intention to Prepare an Environmental Impact Statement and Conduct a Public Scoping Meeting for Road Reconstruction; Cody Yellowstone National Park, WY

ACTION: Notice is hereby given that the Federal Highway Administration (FHWA) intends to prepare an Environmental Impact Statement (EIS) for proposed road reconstruction in the Cody—Yellowstone National Park Vicinity of northwestern Wyoming. The EIS will be prepared in cooperation with the Wyoming State Highway Department (WSHD) and the U.S. Forest Services (USFS).

SUMMARY: The proposed highway reconstruction project will consist of reconstruction of the existing U.S. Highway 14/16/20 beginning at the east entrance to Yellowstone National Park and extending eastward 27.5 miles along the North Fork of the Shoshone River to the east boundary of the Shoshone National Forest. The purpose of this proposal is to provide a modern two lane road with emergency parking shoulders. Line and grade will be adjusted to improve sight distance and safety of the roadway. All bridges will be replaced.

Alternatives to be considered in the EIS will include the no action

alternative and various alignment and design alternatives. The development of these specific alternatives is an ongoing process that will incorporate features brought forth during public scoping in addition to those identified by project engineers as preliminary road design activities progress.

Scoping Process: A public scoping meeting addressing the proposed project will be held in Cody at the City Council Chambers at 7:00 PM on October 4, 1989. Written Scoping comments are due by November 3, 1989, at the address provided below.

EIS Schedule: The draft EIS (DEIS) is expected to be completed by February 20, 1990, at which time its availability will be announced in the **Federal Register** and public comments will again be solicited. A public hearing will be held after the draft EIS has been made available for public and agency review. Public notice will be given of the time and place for the hearing. Final EIS availability will be in May, 1990.

FOR FURTHER INFORMATION CONTACT: C.P. Damon, Operations Supervisor, P.O. Box 1127, Cheyenne, WY 82003, Telephone (307) 772-2101.

Issued on August 31, 1989.

Frederick A. Behrens, P.E.,

Division Administrator, Cheyenne, Wyoming.

[FR Doc. 89-21224 Filed 9-8-89; 8:45 am]

BILLING CODE 4910-22-M

Sunshine Act Meetings

Federal Register

Vol. 54, No. 174

Monday, September 11, 1989

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

FEDERAL DEPOSIT INSURANCE CORPORATION

Agency Meeting

Pursuant to the provisions of the "Government in the Sunshine Act" (5 U.S.C. 552b), notice is hereby given that at 2:08 p.m. on Tuesday, September 5, 1989, the Board of Directors of the Federal Deposit Insurance Corporation met in closed session to consider the following matters:

Recommendations regarding the liquidation of a bank's assets acquired by the Corporation in its capacity as receiver, liquidator, or liquidating agent of those assets:

Case No. 47,338

First Service Bank for Savings, Leominster, Massachusetts

Case No. FL-89-001

First Gibraltar Bank, FSB, Houston, Texas

Application of Stockman's Bank of Commerce, Elk Grove, California, a proposed new bank in organization to be located at 9663 Stockton Boulevard, Elk Grove, California, for Federal deposit insurance and for consent to merge with California Livestock Production Credit Association, Elk Grove, California, a noninsured production credit association.

Application of the First Bremen Bank, Bremen, Ohio, for consent to purchase certain assets of and to assume the liability to pay deposits made in the West Fair, Lancaster, Ohio, Branch of Citizens Federal Bank, a Federal Savings Bank, Miami Florida, a savings association; for consent to participate in the foregoing purchase and assumption transaction deemed a "conversion

transaction" as contemplated in the Financial Institutions Reform, Recovery, and Enforcement Act of 1989; and for consent to establish a branch at the location of the West Fair, Lancaster, Ohio, Branch of Citizens Federal Bank, a Federal Savings Bank.

Matters relating to the possible failure of certain insured banks.

A memorandum regarding the Corporation's liquidation activities.

A personnel matter.

In calling the meeting, the Board determined, on motion of Director C. C. Hope, Jr. (Appointive), seconded by Director Robert L. Clarke (Comptroller of the Currency), concurred in by Chairman L. William Seidman, and Director M. Danny Wall (Director of the Office of Thrift Supervision), that Corporation business required its consideration of the matters on less than seven days' notice to the public; that no earlier notice of the meeting was practicable; that the public interest did not require consideration of the matters in a meeting open to public observation; and that the matters could be considered in a closed meeting by authority of subsections (c)(2), (c)(4), (c)(6), (c)(8), (c)(9)(A)(ii), and (c)(9)(B) of the "Government in the Sunshine Act" (5 U.S.C. 552b(c)(2), (c)(4), (c)(6), (c)(8), (c)(9)(A)(ii), and (c)(9)(B)).

The meeting was held in the Board Room of the FDIC Building located at 550—17th Street, NW., Washington, DC.

Dated: September 6, 1989.

Federal Deposit Insurance Corporation.

Robert E. Feldman,

Deputy Executive Secretary.

[FR Doc. 89-21379 Filed 9-7-89; 10:51 am]

BILLING CODE 6714-01-17

UNITED STATES POSTAL SERVICE BOARD OF GOVERNORS

Amendment to Meeting

FEDERAL REGISTER CITATION OF PREVIOUS ANNOUNCEMENT: 54 FR 36094, August 31, 1989.

PREVIOUSLY ANNOUNCED DATE OF MEETING: September 11, 1989.

CHANGE: Delete the following item from the closed meeting agenda:

2. Consideration of Contract Award for Outside Audit Services.

CONTACT PERSON FOR MORE

INFORMATION: David F. Harris, (202) 268-4800.

David F. Harris,

Secretary.

[FR Doc. 89-21436 Filed 9-7-89; 3:21 pm]

BILLING CODE 7710-12-M

U.S. COMMISSION ON CIVIL RIGHTS

September 5, 1989.

FEDERAL REGISTER CITATION OF PREVIOUS ANNOUNCEMENT: Vol. 54, page 37401, September 8, 1989.

PREVIOUSLY ANNOUNCED TIME AND DATE OF MEETING: Friday, September 15, 1989, 9:00 a.m.—5:00 p.m.

CHANGES IN THE MEETING: Remove item V. from the agenda and renumber remaining items sequentially.

CONTACT PERSON FOR FURTHER

INFORMATION: Barbara Brooks, Press and Communications Division, (202) 376-8312.

Melvin L. Jenkins,

Acting Staff Director.

[FR Doc. 89-21488 Filed 9-8-89; 10:45 am]

BILLING CODE 6335-01-M

Corrections

Federal Register

Vol. 54, No. 174

Monday, September 11, 1989

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 763

[OPTS-62036G; FRL-3476-2]

Asbestos; Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions

Correction

In rule document 89-16262 beginning on page 29460 in the issue of July 12, 1989, make the following corrections:

1. On page 29462, in the first column, in the 16th line, "State 3" should read "Stage 3".

2. On page 29483, in the second column, in the first complete paragraph, in the first line, "control" should read "continue".

3. On page 29497, in the 2nd column, in the 12th line from the bottom of the page, "EAP" should read "EPA".

4. On the same page, in 3rd column, in the 11th line from the bottom of the page, "10 4" should read "10 -4".

5. On page 29502, in the second column, in the 6th line "environmental" should read "environment".

6. On page 29504, in the second column, in the first complete paragraph, in the eighth line, "consumers" should read "consumer".

7. On the same page, in the same column, in number (33), in the first line, "EED" should read "ETD".

§ 763.173 [Corrected]

8. On page 29511, in the third column, in § 763.173(b)(7) and (8), in the first line, "agency" should read "Agency".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 133

[Docket No. 85P-0584]

Cheeses: Amendment of Standards of Identity to Permit Use of Antimicrobials on the Exterior of Bulk Cheeses During Curing and Aging and to Update the Formats of Several Standards

Correction

In a correction to rule document 89-18225 appearing on page 35756 in the

issue of Tuesday, August 29, 1989, make the following correction:

In correction 5, in the third line, "colon" should read "semicolon".

BILLING CODE 1505-01-D

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Part 1910

RIN 1216-AA82

Occupational Exposure to Formaldehyde

Correction

In rule document 89-20245 appearing on page 35639 in the issue of Tuesday, August 29, 1989, make the following correction:

In the 1st column, in the SUMMARY, in the 11th line, "December 18, 1988" should read "December 13, 1988".

BILLING CODE 1505-01-D

Volume 100, Number 1, March 2005

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Registered Federal Laws

Monday
September 11, 1989

Part II

Environmental Protection Agency

40 CFR Part 60

Standards of Performance for New
Stationary Sources; Polymeric Coating of
Supporting Substrates; Final Rule

ENVIRONMENTAL PROTECTION
AGENCY

40 CFR Part 60

[AD-FRL-3528-7]

RIN 2060-AB67

Standards of Performance for New
Stationary Sources; Polymeric Coating
of Supporting SubstratesAGENCY: Environmental Protection
Agency (EPA).

ACTION: Final rule.

SUMMARY: Standards of performance for new, modified, and reconstructed facilities that perform polymeric coating of supporting substrates were proposed in the Federal Register on April 30, 1987 (52 FR 15906). This action promulgates final standards for this industry. These standards implement Section 111 of the Clean Air Act and are based on the Administrator's determination that emissions from the industrial surface coating of fabric 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, and reconstructed facilities that perform polymeric coating of supporting substrates to control emissions of volatile organic compounds (VOC) to the level achievable by the best demonstrated system of continuous emission reduction, considering costs, nonair quality health and environmental impacts, and energy requirements.

DATES: Effective Date: September 11, 1989.

These standards apply to affected facilities for which construction, reconstruction, or modification commenced after April 30, 1987.

Under section 307(b)(1) of the Clean Air Act, judicial review of the actions taken by this notice 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 "Polymeric Coating of Supporting Substrates—Background Information for Promulgated Standards" (EPA-450/3-85-022b). The BID contains: (1) A summary of all the public comments made on the proposed standards and the Administrator's response to the comments; (2) a summary of the changes made to the standards since proposal; and (3) the final Environmental Impact Statement, which summarizes the impacts of the standards.

Docket. A docket, number A-83-42, containing information considered by EPA in development of the promulgated standards, is available for public inspection between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section (LE-131), South Conference Center, Room 4, Waterside Mall, 401 M Street SW., Washington, DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: For policy questions—Mr. Doug Bell at telephone number (919) 541-5568 or Ms. Laura Butler (541-5267) Standards Development Branch, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; for technical questions—Mr. James C. Berry (541-5606) or Mr. Robert Blaszcak (541-5408), Chemicals and Petroleum Branch, 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 impacts 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."

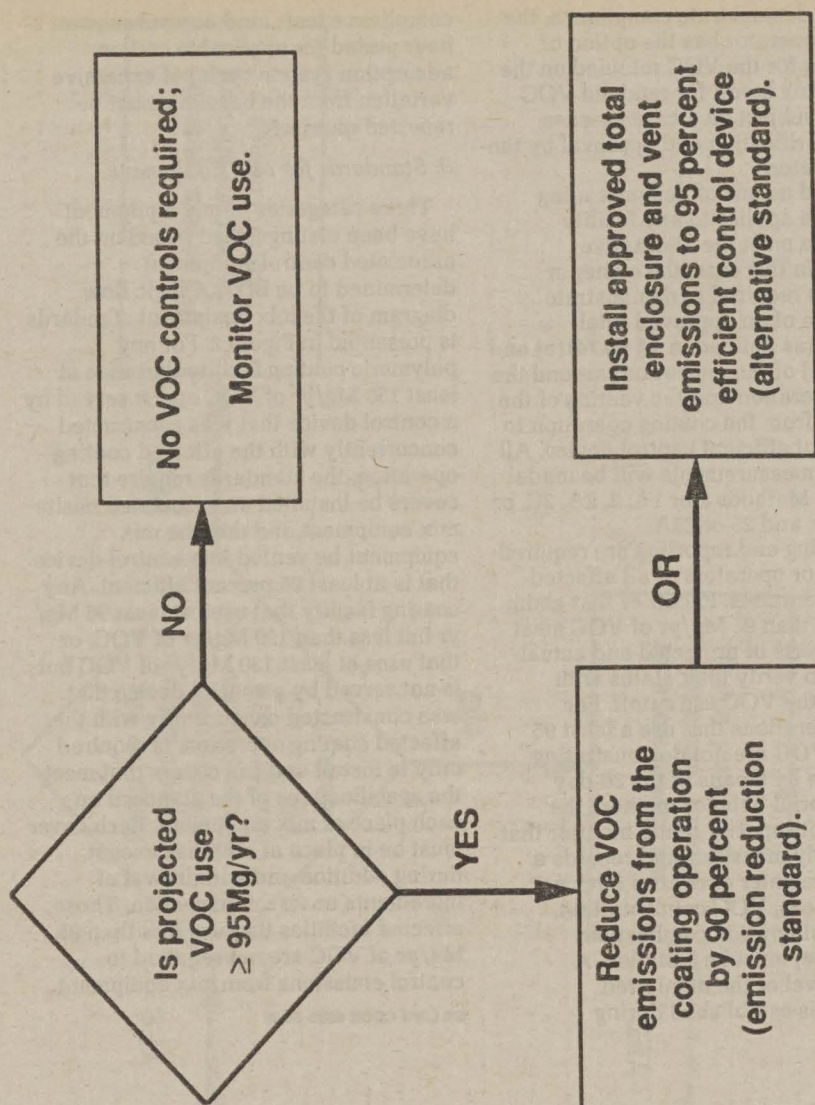
The source category to be regulated is the polymeric coating of supporting substrates. "Polymeric coating of supporting substrates" is defined as a web-coating that applies an elastomer or other polymeric material onto a supporting substrate. Typical substrates include: Woven, knit, and nonwoven textiles, fiberglass, yarn; and cord. Examples of polymeric coatings are natural and synthetic rubber, urethane, polyvinyl chloride, acrylic, epoxy, silicone, phenolic, and nitrocellulose.

The promulgated standards apply to each affected facility, which is defined as each new, modified, or reconstructed coating operation and the associated coating mix preparation equipment (mix equipment) used to prepare the coating for the operation. A coating operation consists of the application/flashoff area(s) and drying oven(s). Mix equipment is defined as the vessels in which ingredients are blended to prepare polymeric coatings. Only onsite mix equipment is considered a part of the affected facility.

A. Standards for Coating Operations

The standards for coating operations are based on BDT, which is defined as a 90 percent efficient emission reduction system composed of an emission capture system and control device. The standards require either: (1) A minimum 90 percent reduction of VOC emissions from the coating operation (emission reduction standard), or (2) the installation of an approved total enclosure (as defined in §§ 60.741(a) and 60.743(b)(1) of the regulation) and venting emissions to a 95 percent efficient control device (alternative standard). Once a coating operation becomes subject to the standards (VOC use exceeds 95 megagrams per year [Mg/yr]), emission control would be required even if VOC use falls below 95 Mg/yr at some future time. A logic flow diagram of the coating operations standards is presented in Figure 1.

BILLING CODE 6560-50-M



COATING OPERATION STANDARDS

Figure 1. Logic flow diagram for polymeric coating NSPS.

BILLING CODE 6560-50-C

Demonstration of compliance with the standards varies with the type of control system in use and the particular standard that applies. For example, compliance with the emission reduction standard can be demonstrated by the use of EPA Methods 1 or 1A; 2, 2A, 2C, or 2D; 3; 4; 18; and 25 or 25A to measure all the gaseous emissions, including fugitive emissions from the affected coating operation, and all emissions entering and exiting the control device. These data are used to calculate the capture efficiency of the system and the efficiency of the control device. The product of these two values yields the overall efficiency of the control system. This type of compliance demonstration is available for all facilities, regardless of the type of control device.

A second means of demonstrating compliance may be used if a VOC recovery system is used and controls only a single coating operation. This demonstration involves a liquid material balance based on VOC contained in the coatings applied at the coating applicator and of the VOC recovered by the control device. The liquid-liquid material balance may be performed either for each nominal 1-month period every month, or for a single period of 3 to 7 days followed by continuous monitoring. For the latter option, the owner or operator must select the number of days (between 3 and 7) that reflect the plant's typical coating practices and provide data that are representative of normal operating conditions. If a liquid material balance

is used to demonstrate compliance, the owner or operator has the option of accounting for the VOC retained on the product. Any credit for retained VOC would be subject on a case-by-case basis to verification and approval by the Administrator.

The third means of demonstrating compliance applies to any facility choosing to meet the alternative standard. In this case, the owner or operator is required to demonstrate installation of an approved total enclosure (as defined in §§ 60.741(a) and 60.743(b)(1) of the regulation) around the coating operation and the venting of the emissions from the coating operation to a 95 percent efficient control device. All efficiency measurements will be made using EPA Methods 1 or 1A; 2, 2A, 2C, or 2D; 3; 4; 18; and 25 or 25A.

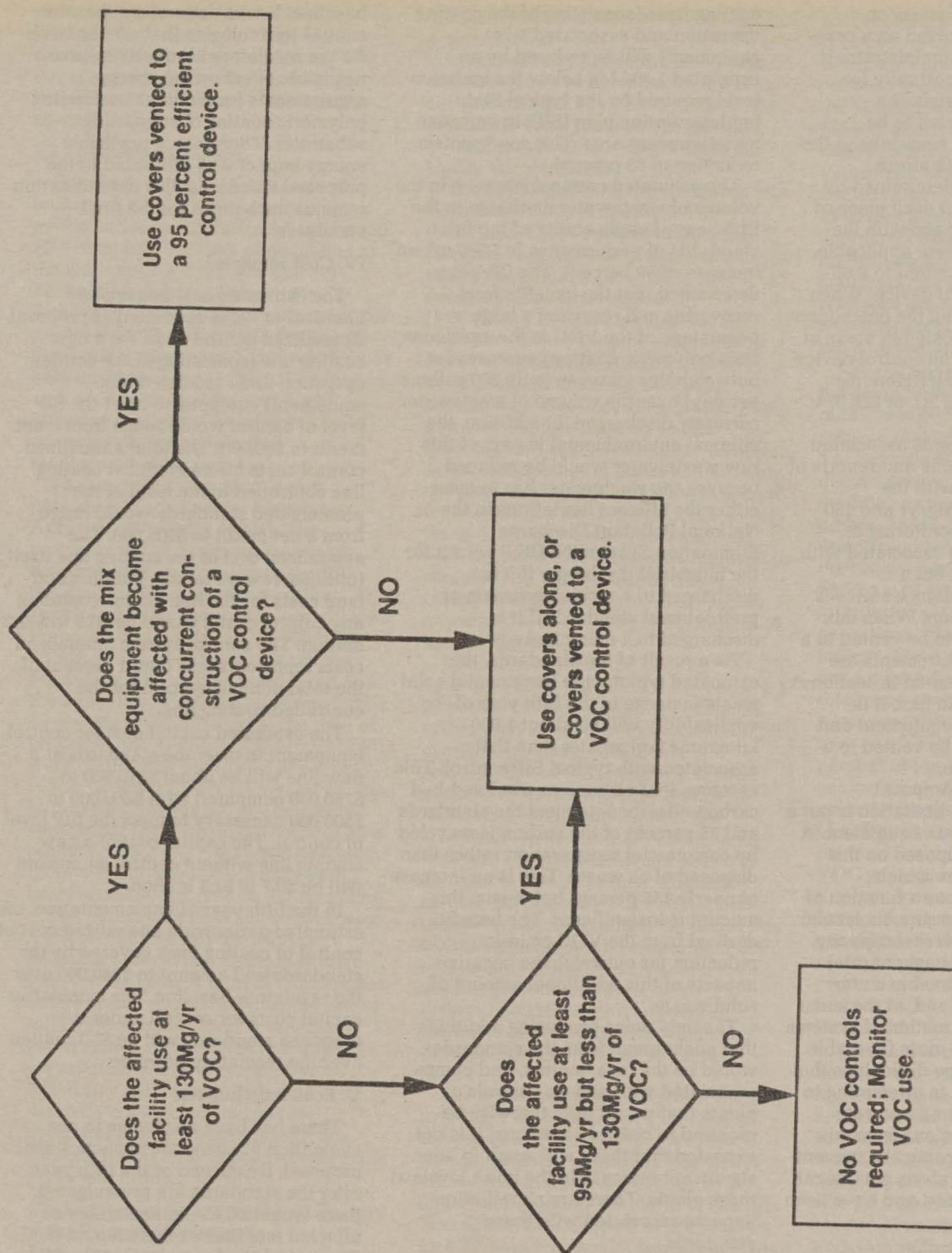
Monitoring and reporting are required of owners or operators of all affected coating operations. Facilities that claim to use less than 95 Mg/yr of VOC must submit reports of projected and actual VOC use to verify their status with respect to the VOC use cutoff. For coating operations that use a least 95 Mg/yr of VOC are not demonstrating compliance by means of the 30-day liquid material balance method, the requirements specify that a monitor that continuously measures and records a critical parameter of control device operation (e.g., VOC concentration, thermal incineration combustion temperature) must be installed. A baseline level of the monitored parameter is established during

compliance tests, and any subsequent 3-hour period (or applicable carbon adsorption system cycle) of excessive variation from the baseline must be reported quarterly.

B. Standards for Mix Equipment

Three categories of mix equipment have been distinguished based on the associated control equipment determined to be BDT. A logic flow diagram of the mix equipment standards is presented in Figure 2. For any polymeric coating facility that uses at least 130 Mg/yr of VOC and is served by a control device that was constructed concurrently with the affected coating operation, the standards require that covers be installed on associated onsite mix equipment and that the mix equipment be vented to a control device that is at least 95 percent efficient. Any coating facility that uses at least 95 Mg/yr but less than 130 Mg/yr of VOC, or that uses at least 130 Mg/yr of VOC but is not served by a control device that was constructed concurrently with the affected coating operation, is required only to install and use covers that meet the specifications of the standard on each piece of mix equipment. Each cover must be in place at all times except during addition and withdrawal of ingredients or visual inspection. Those affected facilities that use less than 95 Mg/yr of VOC are not required to control emissions from mix equipment.

BILLING CODE 6560-50-M



MIX EQUIPMENT STANDARDS

Figure 2. Logic flow diagram for polymeric coating NSPS.

Equivalent means of emission limitation may be approved on a case-by-case basis by the Administrator if, after notice and an opportunity for hearing, the means of emission limitation is demonstrated to be equivalent in reducing emissions to the level required by the standards.

Compliance will be determined by inspection to verify that each piece of mix equipment is equipped with the required cover and, where applicable, that the equipment is vented to a 95 percent efficient control device. When only covers are required, the procedures for their use must be posted in areas of use. The efficiency of the control device will be determined using Reference Methods 1 or 1A; 2, 2A, 2C, or 2D; 3; 4; 18; and 25 or 25A.

Other than requirements associated with VOC use projections and reports of actual use associated with the applicable cutoffs (95 Mg/yr and 130 Mg/yr), there are no monitoring or reporting requirements associated with mix equipment covers, but a determination of compliance status is made at every inspection. When mix equipment is required to be vented to a control device, the requirements are identical to those presented in section A for coating operation. In fact, it is expected that the mix equipment and coating operation will be vented to a common control device.

As discussed in the proposal preamble, an emission limitation is not a feasible standard for mix equipment. A mass emission limit imposed on this type of equipment (from which emissions vary widely as a function of temperature, vapor pressure, molecular weight of the solvent, vessel capacity, operating time, and throughput rate) could not both be achievable under worst-case conditions and, at the same time, require the construction of systems that reflect BDT under more favorable conditions. The extreme difficulties that would be encountered in attempting to obtain representative and accurate measurements of emissions from mix equipment render impractical a percent-reduction format. Therefore, equipment standards were proposed and have been promulgated.

II. Environmental Impacts

Because it is expected that facilities will choose to comply with the coating operation standards by means of the alternative standard, and thus achieve at least 93 percent overall control, the environmental impacts have not changed since proposal. In the fifth year after the standards become applicable, nationwide VOC emissions from new, modified, or reconstructed polymeric

coating lines (consisting of the coating operation and associated mix equipment) will be reduced by an estimated 1,300 Mg below the emission level required by the typical State implementation plan (SIP) in an ozone nonattainment area. This represents a reduction of 83 percent.

The estimated national increase in the volume of wastewater discharge in the fifth year of applicability of the final standards of performance is 5,300 m³, an increase of 69 percent. The EPA has determined that the benefits from recovering and recycling a large percentage of the VOC in the emissions from polymeric coating processes far outweigh this increase (only 300 gallons per day) over the volume of wastewater currently discharged. In addition, the minimal environmental impact of this raw wastewater would be reduced because the wastewater has to meet either the effluent limitations in the National Pollutant Discharge Elimination System (NPDES) permit for the industrial discharger if it is discharged to a receiving stream or pretreatment standards if it is discharged to a municipal sewer.

As a result of the standards, the estimated nationwide incremental solid waste increase in the fifth year of applicability will be about 1,000 kilograms (kg) greater than that associated with typical SIP control. This assumes that all sources use fixed-bed carbon adsorbers to meet the standards and 75 percent of the carbon is recycled by commercial regeneration rather than disposed of as waste. This is an increase of nearly 145 percent but, again, this amount is insignificant. The benefits derived from the VOC emission reduction far outweigh the negative impacts of this additional amount of solid waste.

The only noise-producing additions that might result from the standards would be the fans, motors, and pumps associated with add-on controls at plants that would not otherwise be required to control emissions. It is not expected that these will result in any significant increase in the noise levels at these plants. There are no radiation impacts associated with these standards.

III. Energy Impacts

The energy impacts remain unchanged from those reported at proposal. In the fifth year after this NSPS becomes applicable, nationwide energy consumption by plants performing polymeric coating of supporting substrates will increase by 15 terajoules (TJ) compared with energy consumption determined from the current regulatory

baseline. It was determined that the control technologies that are the basis for the regulatory alternatives have a negligible effect on the energy requirements for facilities performing polymeric coating of supporting substrates. Therefore, a negligible energy impact was attributed to the proposed standards; this determination remains unchanged for the final standards.

IV. Cost Impacts

The estimated cost impacts are identical to those estimated at proposal. Annualized control costs for a new coating line (consisting of the coating operation and associated mix equipment) equipped to meet the SIP level of control would range from a net credit to \$66,000. The total annualized control costs for an identical coating line controlled to the level of the promulgated standards would range from a net credit to \$105,000. The annualized cost of the coating line itself (utilities, raw materials, building and land costs for the line alone, excluding any control costs) would be \$0.9 to \$11.2 million. The control system annualized costs represents less than 1 percent of the total annualized cost for the controlled coating line.

The estimated capital cost for control equipment to meet the standards at a new line will be about \$310,000 to \$750,000 compared with \$260,000 to \$500,000 necessary to meet the SIP level of control. The capital cost of a new coating line without control equipment will be \$0.7 to \$1.1 million.

In the fifth year of implementation, the estimated nationwide annualized cost of control of coating lines covered by the standards will amount to \$340,000 over the regulatory baseline. The cumulative capital costs for control under the proposed standards will be \$3.1 million over the regulatory baseline.

V. Economic Impacts

There has been no change in our evaluation of economic impacts since proposal. By the end of the fifth year after the standards are promulgated, there would be the same number of affected facilities as there would be if the controls had remained at the SIP level. No significant retail price change attributable to the standards is expected because there would be no significant increase in annualized cost. No adverse impacts on capital availability, competition, employment, productivity, or small businesses are expected as a result of the standards.

The environmental, energy, and economic impacts are discussed in

greater detail in the BID for the promulgated standards, "Polymeric Coating of Supporting Substrates—Background Information for Promulgated Standards" (EPA-450/3-85-022b).

VI. 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 recommended for proposal for the polymeric coating of supporting substrates. This meeting was held on September 18, 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 30, 1987 (52 FR 15906). The preamble to the proposed standards discussed the availability of the BID ("Polymeric Coating of Supporting Substrates—Background Information for Proposed Standards" [EPA-450/3-85-022a]), which describes in detail the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal, and copies of the proposal BID were distributed to interested parties.

The opportunity for interested persons to present data, views, or arguments concerning the proposed standards at a public hearing was provided. However, there were no requests to hold such a hearing; therefore, no hearing was held.

The public comment period was from April 30, 1987, to July 14, 1987. In addition, several late comments were received by EPA. A total of 24 comment letters were received concerning issues relative to the proposed standards of performance for facilities that apply polymeric coatings to supporting substrates. All comments have been carefully considered and, where determined to be appropriate by the Administrator, changes have been made to the standards.

VII. Significant Comments and Changes to the Proposed Standards

Comments on the proposed standards were received from industry, one State air pollution control agency, and two trade associations. A detailed discussion of these comments and responses can be found in the promulgation 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 that have been made to

the standards between proposal and promulgation.

In response to the public comments and as a result of reevaluation by EPA, several changes have been made to the standards since proposal. In addition, several revisions have been made to clarify the standards.

The applicability of the standards has been modified and clarified. The definition of mix equipment has been changed to include only those vessels in which the actual mixing takes place. On paragraph has been added (§ 60.740(c)(2)) to state explicitly the exclusion for the graphic arts industry from the standards. Definitions have been changed to clarify that paper coating facilities (including plastic film and metallic foil coaters), leather finishers that apply coatings to discrete skins, and coaters of metal coil are not covered. An exemption also was added for waterborne coatings because use of these coatings may be incompatible with the control technologies required to comply with the standards. These revisions are not expected to result in any significant changes in the impact of the standards.

The standards for the coating operation have been revised to require a 90 percent overall emission reduction rather than 93 percent as proposed. This change was made based on a reevaluation of the feasibility of total enclosures in this industry and of the test data available to support the standards. In general, EPA concluded that while facilities that can use total enclosures and 95 percent efficient control devices may achieve 93 percent or greater overall control, the use of this technology may not be available if EPA-prescribed total enclosures cannot be used in existing plants. It was determined that 90 percent overall control is universally achievable, and the standards have been set at this level.

The standards also have been revised to include an alternative standard, i.e., the use of a total enclosure and 95 percent efficient control device, as an alternative to the 90 percent overall emission reduction standard. While this alternative was allowed at proposal as an alternative means of compliance with the emission reduction standard, EPA has now decided to include it as an alternative standard in order to clarify the intent of the rule. This change is not a revision to the substance of the proposed rule.

The standards for mix equipment have been changed to provide allowances for opening the covers during periods of legitimate need such as when adding ingredients,

withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with the cover in place. In addition, the standards for mix equipment have been changed to require covers that meet specified requirements rather than vapor-tight covers equipped with conservation vents as proposed. The use of covers alone is also allowed on mix equipment associated with coating operations where there is no concurrent construction of a control device. These revisions are not expected to result in any significant changes in the impacts of the standards.

Several changes have been made in the compliance provisions. Although no public comment was received on the subject, the definition for total enclosure has been clarified, and requirements for demonstrating that a capture system qualifies as a total enclosure have been added. These changes were made to provide guidance to industry regarding the requirements to gain automatic approval of total enclosures to meet the alternative standard for coating operations. The key requirements are as follow: (1) All sources of VOC emissions are a minimum of four equivalent diameters away from natural draft openings (NDO's); (2) the cumulative area of all NDO's is no greater than 5 percent of the surface area of the enclosure; (3) the average inward face velocity across the NDO's is a minimum of 3,600 meters per hour (m/h), and demonstrably inward at all times; (4) all VOC gas streams from the enclosure are directed to a control device; and (5) all access doors and windows not considered NDO's are closed during routine operation of the process. A procedure for determining the average inward face velocity across the NDO's is included in the regulation.

The final coating operation standards have been revised to clarify that the use of certain equipment, i.e., a total enclosure and a 95 percent efficient control device, are available as an alternate standard to the 90 percent emission reduction standard. In other words, the owner or operator may choose to comply with either the emission reduction standard or the alternative standard. In addition, the compliance provisions for coating operations meeting the emission reduction standard have been revised to clarify that owners or operators may demonstrate compliance by any of the applicable methods. The option of performing a one-time short-term (3- to 7-day) material balance followed by continuous monitoring was added as an optional compliance method. This

option may be attractive at facilities that cannot or do not, want to conduct the continuous detailed monthly measurements that are required for the other liquid material balance option.

Other minor revisions to the compliance provisions have been made. One portion of the gaseous emissions test compliance method (§§ 60.743(a)(1)(ii) and (a)(2)(ii)) that was unclear and subject to interpretation has been deleted in favor of the alternative standard previously discussed. A paragraph has been added to provide for the use of control devices other than carbon adsorbers, incinerators, and condensers (§ 60.743(e)).

Minor changes have been made to the section on monitoring (§ 60.744). Wording has been added to specify clearly that monitors must be in place and operating during all performance tests. The monitors required for carbon adsorbers are now required to measure the "concentration level of organic compounds" instead of the VOC concentration in parts per million by volume. Although many monitors give readings in terms of parts per million by volume, the revision is intended to reflect the fact that EPA has not developed performance specifications or other quality assurance procedures to ensure the accuracy of such monitors. However, units are available that are sufficiently precise to allow assessment of operation and maintenance practices by comparing monitoring data with the baseline value established during the performance test. The accuracy requirements for temperature monitors have been changed to be consistent with other VOC control regulations.

The performance testing and monitoring provisions for fixed-bed carbon adsorption systems have been revised to represent more accurately the performance of multibed systems. This revision was an indirect result of a public comment concerning the performance of fixed-bed carbon adsorbers. Performance tests are the direct means of determining the compliance status of an affected facility and serve as the basis for legal enforcement actions against noncomplying sources. In contrast, the monitoring devices required by these standards serve only as indicators of control device performance to aid enforcement agencies in targeting inspections and performance tests toward potential violators. The revised procedures will ensure that the performance test runs and monitoring averaging periods will parallel the adsorption cycles of all the individual

adsorber vessels or the system's complete sequential rotation through the adsorption cycles of all the vessels. Use of a testing or monitoring period that does not correspond to an integral number of adsorber vessel cycles or system rotations could bias the results slightly in either direction. Efficiencies would be biased high if the test run or monitoring period did not include the elevated emissions typical at the beginning and end of a vessel's adsorption cycle; efficiencies would be biased low if the period included a disproportionate number of these emission peaks.

The revised carbon adsorption system performance testing provisions include separate requirements for systems with a single common exhaust stack and for systems with individual stacks for each adsorber vessel. The Agency believes that a common exhaust stack allows simpler performance testing that is more representative of the entire system's performance but has included provisions for individual exhaust stacks because this is currently the more typical configuration.

For adsorption systems with a common exhaust stack serving all the adsorber vessels, the entire system must be tested. Three test runs are required; each run must correspond to one or more complete rotations through the sequential adsorption cycles of all the adsorber vessels.

For adsorption systems with individual exhaust stacks, each adsorber vessel must be tested individually. Three test runs are required for each vessel; each run must correspond to one or more complete adsorption cycles. A procedure has been added to the compliance provisions for computing a system efficiency from the individual adsorber vessel efficiencies.

The final adsorber monitoring provisions parallel the final performance testing provisions. Again, separate provisions apply to systems with a common exhaust stack and those with individual stacks. No increase in monitoring costs is anticipated.

For adsorption systems with a common exhaust stack, a monitoring device must be installed on the common exhaust stack and one also may be installed on the common inlet duct. The owner or operator must report each occurrence when the average emission level or system efficiency (depending on whether the outlet only, or the inlet and outlet gas streams are monitored) over three successive system rotations varies outside the specified range.

For adsorption systems with individual vessel exhaust stacks, a

monitoring device must be installed on each individual exhaust stack, and a monitoring device also may be installed on the common inlet duct or on each individual inlet duct. Each adsorber vessel must be monitored for a minimum of one complete adsorption cycle per day. A 3-day rolling average emission level or efficiency for each vessel (depending on whether the outlet only, or the inlet and outlet gas streams are monitored) must be computed each day from the daily averages, and these 3-day rolling averages must be reported when they vary outside the specified ranges.

Other changes have been made to the sections on alternate means of emission limitation, reporting and recordkeeping requirements, and definitions and symbols. For the most part these changes correct or clarify the sections and are dealt with in the comments and responses that follow. All references in the final standards have been changed from cubic meters to megagrams to be consistent with the mass reporting basis typically used by industry and enforcing agencies. It is now specified that monitoring data recorded during performance tests and instances when actual annual VOC use exceeds the applicable cutoff must be reported. Periods when monitors or control devices are not operational during process operations must also be reported. If no excessive variations of the monitored parameters specified in § 60.747(d)(1)–(6) have occurred, a semiannual statement certifying this fact is required.

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: selection of the source category, affected facility, selection of BDT and emission limits, control costs, test methods and monitoring, and wording of the regulation. All comments and responses are included in the promulgation BID.

A. Selection of the Source Category

Commenters questioned the applicability of the proposed polymeric coating standards to the leather finishing, graphic arts, and paper coating industries. One commenter said that leather finishing does not meet the applications criteria established in the proposed standards because leather is not handled as a continuous substrate. The commenter stated that leather-like materials (bonded leather fiber products and artificial leathers) can be coated in continuous form and would, therefore, meet the proposed standards.

applicability criteria. Other commenters stated that it was unclear if the standard included graphic arts and paper coating industries (including plastic and metallic foil coating).

The EPA agrees that leather, when used as a general term for discrete hides or skins, is not a continuous substrate and that leather finishing was not intended to be covered under the standards. Therefore, leather finishing has been excluded from the list of web coating operations in the final standards. Leather-like materials, such as urethane-coated and bonded leather fiber products are, however, covered by the standards. The graphic arts and paper coating industries were not intended to be included in the proposed polymeric coating standards. Language has been added to the final standards to make these exclusions clear.

Other commenters requested that EPA establish a separate subcategory in the standards for textile coating operations. The commenters cited product and operational variability as factors limiting this industry's ability to comply with the proposed standards. Specific technical comments related to this issue and EPA's responses are discussed in Section C. After fully considering the points raised by the commenters, EPA has decided not to create a separate subcategory or standard for the textile coating industry. However, EPA has adjusted the overall level of the coating operation standard downward to 90 percent in response to the concerns raised by the commenters. The EPA believes that this level of control is universally achievable by the polymeric coating industry, including textile coaters.

B. Affected Facility

One commenter asked for clarification of how the determination of affected facility is made for coating operations that share mix equipment. The commenter presented an example of a new coating operation served by an existing central mix room and asked whether existing coating operations served by the common mix equipment would also become affected facilities.

The affected facility is defined as "each coating operation and any onsite coating mix preparation equipment used to prepare coating for the coating operation." In the case presented by the commenter, the existing coating operations would not become subject to the standards because they are not part of the affected facility that includes the new coating operation. However, the existing mix equipment that serves the new coating operation would become subject to the standards. The only way

that an existing coating operation would come under the standards would be if the potentially affected facility of which it is a part (i.e., the coating operation with associated mix equipment) were to be modified or reconstructed.

Other commenters noted that it is not always possible to dedicate a limited number of pieces of mix equipment to a given affected coating line and were concerned that entire mix rooms would become affected if a new coating operation is added.

The commenters have interpreted the proposed regulation correctly. However, EPA has revised the regulation to reduce the burden on plants subject to the mix equipment standards. In most cases, venting mix equipment emissions to a control device is judged to be cost effective whether one piece or an entire mix room becomes affected. When a new coating operation is constructed, a new control device would be necessary to control its emissions. This control device could readily be designed to accommodate emissions from the associated mix equipment that becomes affected when the coating operation is constructed. Under this scenario, the venting of mix equipment emissions to a control device is cost effective.

The hypothetical scenario of concern is that mix equipment could become affected by the standards through modification or reconstruction of a coating operation that uses an existing control device. Although it is considered unlikely, it is possible that the existing control device would have insufficient capacity in reserve to handle all or part of the mix equipment emissions. This would result in a requirement to install a separate control device for these emissions; such separate control of mix equipment emissions is not cost effective. Because it is possible that mix equipment at some modified or reconstructed facilities could not be controlled by existing control devices, the standards have been revised to require use of covers alone if a coating operation is modified or reconstructed without concurrent construction of a control device. Concurrent construction is defined in the final regulation as 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. This period is designated because it is consistent with the normal planning and purchase cycles for equipment of this type. The 2-year period also coincides with the period for which records

required under these standards must be retained.

C. Selection of BDT and Emission Limits

1. Control of Coating Operation. Commenters questioned the overall control efficiency of 93 percent required of coating operations under the proposed standards. The commenters addressed both the degree of capture and the carbon adsorber efficiency required to comply with the standards. One commenter questioned the practicality of capturing virtually 100 percent of vapors at all times and joined other commenters in expressing concern that the need for workers to access equipment for feeding raw materials and retrieving products also makes compliance with a requirement for 100 percent capture difficult. The commenter suggested that, with diligent attention to the equipment, a control device efficiency of 95 percent and a capture efficiency of 80 percent could be attained, for an overall efficiency of 76 percent. Another commenter stated that the 98 percent capture efficiency that would be required to obtain an overall efficiency of 93 percent has not been demonstrated relative to the design factors assumed in the economic analysis.

Other commenters believed that the 95 percent efficiency ascribed to carbon adsorption is based on insufficient data from the polymeric coating industry. The 95 percent efficiency was based on test data that included only one polymeric coating operation that used a single solvent. According to the commenters, these data cannot adequately demonstrate a control technology for an entire industry that uses a multitude of solvents and coating formulations. A commenter said that the recovery efficiencies are biased because they rely on data obtained with gas analyzers only under the most favorable short-term operating conditions.

The EPA has determined that the final standards for coating operations are attainable. The following discussion of support for this conclusion addresses: (a) Capture efficiency, (b) control device efficiency, (c) overall control efficiency, and (d) VOC recovery.

a. Capture efficiency. In response to comments, EPA has reevaluated the feasibility of total enclosures in the polymeric coating industry. The term "total enclosure" is defined in § 60.741(a) as a structure that is constructed around a source of VOC 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 drying oven itself may be part of the total enclosure. A total enclosure must satisfy all of the design and operational requirements as defined in the promulgated regulation (§ 60.743(b)(1)) or be demonstrated to be equivalent to these requirements to the Administrator's satisfaction.

To evaluate the comments, information requests were sent to three facilities that had indicated that enclosures were in use, and plant visits were made to three facilities that had indicated that they were batch operations and needed frequent access to the coating equipment during operation. An expert in industrial ventilation and a vendor of local ventilation systems were contacted. Using the data gathered and standard ventilation principles and guidelines, EPA reached the conclusions discussed below.

As a result of its investigation, EPA has concluded that most facilities would be able to install and properly use a total enclosure around an affected coating operation. Even at facilities with extensive access requirements, local ventilation systems (hoods or other partial enclosures) can be constructed that will achieve a very high capture efficiency while affording necessary access. In most cases, the local ventilation system could be used in conjunction with a larger enclosure (up to room-size) to meet the specifications for a total enclosure.

However, there remains the possibility that some facilities may not be able to install an enclosure that meets the specifications. For instance, at an existing facility adding a new coating operation or modifying/reconstructing an existing coating operation, space constraints might not allow construction of any enclosure large enough for personnel to work within during operation. If the same facility could not install a small total enclosure immediately around the application/flashoff area because of access requirements, the use of a total enclosure would not be feasible for that facility. One of the facilities visited during the investigation of this issue would probably encounter these constraints.

Because there may be facilities at which a total enclosure is not feasible, EPA investigated capture systems that fell short of the requirements for a total enclosure and concluded that a capture efficiency of 95 percent can be achieved even without a total enclosure through the use of a well-designed local ventilation system. Although the actual percentage varies from facility to facility, about 90 percent of the VOC

emissions from a coating operation are generated within the drying oven. Because proper design, operation and maintenance assure a high capture efficiency of drying ovens, only 50 percent of the emissions generated in the application/flashoff area must be captured to achieve a total capture efficiency of 95 percent. Even if only 80 percent of VOC emissions from the coating operation are generated in the drying oven, only 75 percent of the application/flashoff area emissions must be captured to achieve 95 percent overall capture. The EPA has concluded that these capture efficiencies can be achieved in a cost-effective manner with a well-designed local ventilation system (hood or other partial enclosures).

b. Control device efficiency. The EPA thoroughly reviewed available information and test data for carbon adsorbers to address the commenters' concerns that carbon adsorption may not be able to reduce VOC emissions by 95 percent for the polymeric coating industry. Carbon adsorption has been used for the last 50 years by many industries to recover a wide variety of solvents. With the experience gained from extensive application under very diverse conditions, the technology has matured to the point that an adequately designed, operated, and maintained system can readily attain an efficiency of 95 percent or higher on a continuous basis. This fact has been demonstrated across many industries with many different solvents and solvent blends. The efficiency of a carbon adsorption system is determined by its design and operating parameters and the composition of the solvent-laden airstream (SLA) vented to it, not by the process equipment that generates the exhaust stream. Thus, it is reasonable to expect the attainment of similar efficiencies through the application of this technology in the polymeric coating industry.

Data indicating the efficiency of carbon adsorption in this and related web coating industries were discussed in the proposal BID. Those data as well as data received after proposal from a polymeric coating plant support control efficiencies capable of meeting the standards. The EPA also has recently concluded an extensive study of the ability of carbon adsorbers to operate continuously at an efficiency of at least 95 percent. This report addresses many of the problems cited by commenters that could be faced by a batch operator, such as situations where multiple lines are ducted to a carbon adsorption system or where the SLA contains varying blends of solvents and other

VOC, resulting in short-term variations in flow rate or inlet concentrations.

The report fully addresses these concerns and is discussed more thoroughly in the promulgation BID. The report indicates that these concerns would not significantly affect the efficiency of a properly designed and operated carbon adsorption system. The presence of low inlet concentrations or minor variations in outlet concentrations should not pose a major problem for a facility attempting to show compliance with the coating operation standard. Performance test and monitoring data are averaged over adsorber system cycles, so short-term inlet variations will not greatly affect the long-term average. If the bed is properly designed and regenerated, a constant outlet concentration can be attained such that greater than 95 percent removal is achieved for the entire range of inlet concentrations. Furthermore, by diverting or shutting off the airflow from idle equipment, inlet concentrations can be consistently maintained at higher levels to ensure the desired removal efficiency.

c. Overall control efficiency. An overall control efficiency of 93 percent has been demonstrated by a 4-week liquid material balance at a plant in the pressure sensitive tapes and labels (PSTL) industry that is equipped with a "total building air evacuation system," which was assumed to be a total enclosure for purposes of proposal analyses. The performance of this PSTL plant is considered representative of the control efficiency attainable in the polymeric coating industry because of the many similarities in the two industries. In both, coatings with a similar range of solvent contents are applied with the same types of applicators to continuous substrates and dried in the same types of drying ovens. Capture and control systems for emissions of VOC are very similar. The production at the PSTL plant during the test period was characterized by many short runs of many different products using a variety of solvents, as is often the case at polymeric coating plants.

Since proposal of the polymeric coating standards, EPA received liquid material balance data from a member of the industry (Grace) who coats textile printing blankets. This operation consists of two coating lines in a room-type enclosure. The EPA concluded that these data, which show 93 percent overall recovery based on a 3-day liquid material balance, substantiate, along with the PSTL data, that emission capture and reduction systems are capable of achieving 93 percent control.

The EPA, however, has reevaluated the proposed standards in light of industry comments (particularly issues related to batch operations and design and use of total enclosures). Although the polymeric coating standards require demonstration of an overall level of control, the BDT for the standards is discussed typically in terms of the capture system and control device efficiencies. The product of these efficiencies yields the overall level of control. The control device component of BDT has been demonstrated to be a minimum efficiency of 95 percent for this industry. Therefore, the important variable in evaluating the overall level of control that can be achieved by BDT is the efficiency associated with capture component.

Any change in the assumed level of capture efficiency should be evaluated considering that: (1) The two data points at 93 percent overall efficiency (PSTL and Grace) are associated with unknown capture and control device efficiencies and (2) neither capture system demonstrated complete consistency with EPA's total enclosure criteria. It is quite possible (and perhaps probable) that capture efficiency at these plants was less than the 98 percent minimum previously ascribed to a total enclosure. Therefore, to conclude that capture efficiency was 98 percent, based on an assumed control device efficiency of 95 percent (i.e., $0.98 \text{ capture} \times 0.95 \text{ control} = 0.93 \text{ overall control efficiency}$) may be oversimplification. Another way to estimate capture efficiency of these two facilities is to assume the control device efficiency was higher (i.e., 98 percent) instead of the minimum 95 percent. If so, the 93 percent overall control could have resulted with only a 95 percent efficient capture device.

To ensure the selection of achievable standards for the entire industry, the overall level of control required should be based on the minimum efficiencies of the two components of BDT. The EPA has concluded that control devices are at least 95 percent efficient, even while acknowledging that they are capable of, and often achieve, much higher efficiencies. Although EPA believes that total enclosures achieve essentially 100 percent or total capture, it has not been adequately demonstrated that all segments of this diverse industry can install and operate total enclosures that meet EPA's specifications. It is, therefore, reasonable to allow for this variability when setting the capture system efficiency component of BDT for this industry. Based on these considerations, EPA has adjusted the

standards downward from 93 percent to 90 percent overall control (i.e., $0.95 \text{ capture} \times 0.95 \text{ control} = 0.90 \text{ overall control efficiency}$). The promulgated standards recognize that strict adherence to EPA's total enclosure criteria may be neither universally achievable nor required to meet the standards but would still allow use of the alternative standard for those sources that can meet the total enclosure specifications. The EPA believes that this will be an attractive alternative for that majority of plants for which a total enclosure is feasible. Because the compliance test provisions associated with a total enclosure are simpler and less expensive to carry out than a capture efficiency test, there is continuing incentive for sources to install total enclosures.

In conclusion, the standards have been established at an overall control level of 90 percent, with BDT defined as a 90 percent efficient emission reduction system that is composed of an emission capture system and control device. The option of using a total enclosure as the emission capture system is allowed where feasible and is attractive to the source because it simplifies the performance test. This change to the standards takes into account concerns about variability in measurement technique, operating parameters, worker access requirements, etc. The revised standards remain cost effective despite a lower emission reduction. This option potentially results in a projected decrease in nationwide VOC reduction over 5 years compared to the standards as proposed (964 Mg compared to 1,060 Mg). However, because of the use of total enclosures or control devices that achieve more than 95 percent efficiency, facilities will actually achieve emission reductions greater than 90 percent.

d. VOC recovery. The type of solvent used and VOC generated is a key design criterion in any carbon adsorption system. The adsorption characteristics of each compound are assessed using data on their physical properties, and the system is designed to accommodate these properties. While adsorbers can be designed to recover a blend of solvents and other VOC successfully, changes in the characteristics of a feed stream (i.e., the introduction of varying solvent blends due to a batch process and cure volatiles) can affect both adsorption and desorption cycles. If the system cannot accommodate the new SLA stream, it is possible that the working capacity of the bed could decrease below design conditions or that costs of increased steam requirements or carbon bed replacement

due to excessive fouling could lead to poor performance or excessive costs of operation.

The operator's responsibilities under these conditions are to design the system to accommodate worst-case VOC composition conditions and to monitor the adsorber outlet streams adequately to assure that the beds are not operated after breakthrough. It is advantageous to standardize solvent blends and minimize the number of "incompatible" solvents likely to be ducted to the control device simultaneously. There may be cases where these measures are impossible and carbon adsorber performance cannot be continuously maintained at 95 percent efficiency at reasonable cost; in these cases, carbon adsorption is not the appropriate control technology. Incineration is often selected, because it can control a wide variety of VOC with relative ease.

A preliminary cost analysis shows that, when compared to baseline control assuming use of an incinerator, a 98 percent efficient incinerator can cost-effectively control emissions from a coating operation equipped with a total enclosure. Incinerators were not considered cost effective at proposal, because they were considered a more stringent regulatory alternative, and the incremental cost compared to a carbon adsorber at 93 percent overall control was considered unreasonable. However, if conditions at a new or modified line prohibit the use of carbon adsorption, these same conditions would prohibit the use of carbon adsorption under baseline regulations. Therefore, the cost of incineration under the NSPS should more logically be compared to the cost of incineration under baseline regulations. The cost effectiveness of control is reasonable in all cases when analyzed using these assumptions.

A commenter presented data that, according to the commenter, indicated that only under ideal conditions could the plant (Grace) recover 93 percent of the VOC applied at the coating operation and that, on a day-to-day basis, recovering 93 percent is very unlikely. Over a 3-day continuous run, the operation achieved 93 percent recovery based on a liquid-liquid material balance. The average recovery efficiency over a month for this operation, also calculated using a liquid liquid material balance was 88 percent. The commenter stated that even though 93 percent is theoretically possible, 85 percent is the maximum practical recovery rate.

Followup contacts were made with the commenter to determine the

differences between the "ideal" conditions during the 3-day run when a 93 percent overall efficiency was measured and the "typical" operation during the remainder of the month when a monthly average of 85 percent was measured. The two major differences noted by the commenter were (1) More careful measurements were taken during the 3-day run and (2) there was a shorter carbon bed adsorption time during the 3-day run. The commenter emphasized the extensive effort and extreme care used in obtaining measurements for the 3-day material balance. The adsorption time was decreased to 75 percent of the normal adsorption time during the 3-day run to ensure that breakthrough would not occur. The commenter noted that this reduction in adsorption cycle time was not cost effective because of the increased steam requirements for desorption. However, the commenter added that the difference in cycle time would probably not have a significant effect on performance because the original cycled length is "very conservative." The commenter stated that the plant would prefer to use breakthrough monitors instead of timers to control adsorption/desorption cycles however, a reliable monitor has not been found.

Although it is not possible to determine quantitatively the cause of the difference between the two data sets because separate control and capture efficiency are not provided in either case, comparison of the short-term and long-term performance data indicates that the measured differences may largely be due to accounting for mix room losses, retained VOC in the web, and waste VOC in the short-term calculations. These losses were not taken into account in the monthly efficiency calculations. When the short-term efficiency is recalculated without accounting for these losses, the value is consistent with the typical monthly efficiencies reported by the source. Thus, it is reasonable to expect that, if these types of losses were taken into account during the long-term measurements, the measured overall efficiency would approximate the short-term results. This indicates that short-term data may be reasonably representative of long-term performance if measured on the same basis. Furthermore, the short-term measurement techniques reflect the control system's efficiency in accordance with the procedures required for a liquid material balance in the final regulation. Thus, EPA believes that rather than discredit the level of the

standards, these test data support the standards.

The information from the commenter does indicate that performing a monthly material balance in some cases (i.e., when multiple coatings are used) may require more resources than are reasonable to spend on compliance demonstrations. However, alternative methods of demonstrating compliance with the standards are available such as the alternative standard, gas-phase test, and short-term (3- to 7-day) liquid material balance. In any case, the monthly liquid material balance compliance provision has limited applicability and would not be an appropriate compliance method for the situation described by the commenter because multiple emission sources are ducted to the same control device.

A commenter recommended adding a requirement for 90 percent control for facilities using less than $110 \text{ m}^3/\text{yr}$ of VOC if the incremental cost effectiveness is less than \$1,100/Mg. The commenter stated that 90 percent control appears to be cost effective below $110 \text{ m}^3/\text{yr}$ of VOC and suggested evaluating this option by using model operation(s) below $95 \text{ m}^3/\text{yr}$ of VOC usage.

With the decision to reduce the overall level of control required by the standards from 93 to 90 percent, EPA reevaluated the VOC use cutoff level for this industry. This analysis focused on the same basic question as that raised by the commenter, e.g., would cost-effective control be possible for facilities that qualify for the lower cutoff level. As discussed in the promulgation BID, cost effective control of such facilities at a 90 percent (or lower) overall control level is theoretically possible. However, it is expected that the environmental impact of the change would be relatively small. According to the economic impact analysis conducted at proposal, it is expected that growth in this industry will occur in lines with annual VOC usage greater than 95 Mg/yr ($110 \text{ m}^3/\text{yr}$). Therefore, the promulgation of a lower VOC use cutoff will not affect the costs and emission reductions projected as a result of the standards, and the cutoff level has been retained as proposed. Furthermore, it is expected that most facilities will choose to comply with the alternative standard, thus achieving at least 93 percent overall control. For these facilities, the analysis that determined the proposed cutoff is still applicable. In any case, EPA will reconsider the cutoff level at the 4-year review of the standards if additional data indicate that there is an

environmental benefit to use of a lower cutoff.

Commenters believed that EPA's model plants do not adequately reflect the diversity in the polymeric coating industry and disagreed with several assumptions used in the analysis. The model plants are based on operations that use one solvent on one substrate and use equipment dedicated to one method of coating. However, according to the comments, coating operations use several solvents or solvent blends; substrates of several types, thicknesses, and widths; and various impregnating and coating head configurations. Also, because of the specialized properties of coated fabrics, long, efficient runs are rare, and batch processing is typical. Thus, models that base control efficiency only on size and solvent use fail to consider adequately major differences in process operations that affect both efficiencies and costs.

A commenter questioned the following assumptions that were used in the analysis: (1) Characterizing magnetic tape coating operations as similar to polymeric coating operations; (2) including a model plant controlled by an air-atmosphere condenser, a control device that has not been demonstrated for the polymeric coating industry, while not considering an inert-atmosphere condenser; and (3) setting the solvent concentration in the oven exhaust and control device inlet stream at 25 percent of the lower explosion limit (LEL), a level that, according to the commenter, is unsafe for oven operating and does not account for the lower concentrations in the air from solvent storage tanks, mixers, and flashoff areas, which would reduce control efficiency by lowering the overall inlet stream concentration.

The EPA believes that the range of practices typical in the polymeric coating industry have been adequately considered in the development of the standards and that the standards are achievable over the range of practices expected to occur. Based on contacts with and visits to a large number of polymeric coating plants over the course of standards development, four different types of "model lines" were developed to represent the diverse segments of the industry. To account for the range of sizes typically found in each sector of the industry, the impacts of the regulatory alternatives were analyzed for two or three annual VOC use rates within each type of model facility. In all, a total of nine different combinations of facility type and size were analyzed. In the judgment of EPA, these model plants cover the range of variables that affect VOC emissions, and these variables

have been given proper consideration in the development of the standards. In fact, after proposal EPA visited and requested detailed process information from representative plants in order to learn more about enclosure design and capture efficiency parameters as well as batch operations. This information confirmed the validity of EPA's approach.

The responses to the comments that questioned EPA's assumptions are as follows:

1. Although there are differences between the magnetic tape and polymeric coating operations, the basic configuration of unwind station, application/flashoff area, drying oven, and rewind station is common to both. Also, the VOC content of the coatings, the types of solvents, coating application techniques, and the mix equipment is often similar. As a result, the SLA streams generated by the processes are similar in composition, as are the applicable control technologies.
2. At least one air-atmosphere condenser has been used on a polymeric coating operation. A representative of the plant indicated that no major difficulties with the system had been encountered. However, it is unlikely that this control technology will be used at polymeric plants that are controlling mix equipment emissions as well as coating operation emissions because the operation of a fine-tuned, closed-loop condenser can be adversely affected by the moist, intermittent airflow from mix equipment. The use of an inert-atmosphere condenser was not analyzed because use of this system is incompatible with a process where oxygen in the application/flashoff area is essential for worker access.
3. The assumption that the SLA stream at the inlet of the control device has a concentration as high as 25 percent of the LEL is justified. The standards contain no requirement that emissions from solvent storage tanks be ducted to a control device. In any case, a more dilute SLA stream could be used as makeup air in the drying oven. Good design should ensure that emissions from mix equipment are ducted to the control device at a concentration of 25 percent or less of the LEL. In addition, the airflow from this source is quite small in comparison to that from the drying oven, so a reduced concentration would have little effect on the overall concentration of the inlet SLA stream. The air containing the emissions from the application/flashoff area is expected to be used as makeup air for the drying oven, not ducted directly to the control device. Drying ovens in this and other industries are operated safely at a

concentration of 25 percent of the LEL. In fact, ovens equipped with appropriate safety features are allowed to operate at up to 50 percent of the LEL.

One commenter stated that there is no best demonstrated technology for a coating operation that uses both aqueous and organic solvent coating systems, nor is there a provision for handling this type of operation where a common mixer is used.

The commenter is correct. Use of the proposed control technologies may be incompatible with the use of waterborne coatings. Therefore, an exemption for waterborne coatings has been added in § 60.740, Applicability and Designation of Affected Facility, to specify that the coating operation or mix equipment may be vented directly to the atmosphere while waterborne coatings are used. A definition of waterborne coatings has been developed that sets the minimum water content (5 percent by weight of the volatile fraction) necessary to be considered a waterborne coating. Because "waterborne" coatings may actually contain organic solvent and generate VOC emissions, the exemption for their use provides a VOC content ceiling of 9 percent weight of the volatile fraction. This ceiling was developed based on a "worst-case" baseline coating that is 85 percent solvent (15 percent solids) by volume. The level specified in the exemption is equivalent to a 90 percent VOC reduction for this coating. The VOC in waterborne coatings is not to be included in the annual VOC usage rate when determining if a facility is below the VOC use cutoff. However, the amount of VOC in waterborne coatings reported by the industry is negligible (0 to 2 percent by weight) of coating applied, and the impact of this exclusion is expected to be minor.

2. Control of Coating Mix Preparation Equipment. A commenter recommended that coating mix preparation equipment include only mixers and not mills, holding tanks, or other equipment. The commenter observed that the only coating mix preparation equipment considered in developing the standards and demonstrating the feasibility of the standards was the mix tank. The feasibility of the proposed standard for mills, holding tanks, and other equipment, which are included in the definition for coating mix preparation equipment, was not considered. At the commenter's plant, portable containers are used to transport coating from the mixing area to subsequent coating preparation and application areas. These portable containers appear to be included in the definition as "holding tanks," but, according to the commenter,

there is no feasible or practical way for these portable containers to comply with the requirement that all VOC emissions be vented to a control device. The commenter also questioned the feasibility of (1) Capturing and venting all VOC emissions from mills to a control device at a concentration range within which the control device is efficient or (2) installing a vapor-tight cover equipped with a conservation vent. The commenter said that only equipment that was specifically addressed in the development of the standard should be included in the definition of coating mix preparation equipment. The commenter recommended that "coating mix preparation equipment" be defined as "mix tanks in which solvent and polymer are blended to prepare polymeric coating formulations."

The final rule requires that only affected mixing vessels be covered and vented to a 95 percent efficient control device. The definition of "coating mix preparation equipment" has been changed to "all mixing vessels in which solvent and other materials are blended to prepare polymeric coatings."

Only mixing vessels were considered in the analysis of the cost and cost effectiveness of mix equipment control because essentially all mixing area emissions that were intended to be regulated are generated from the mixers. Mills in this industry are most frequently operated using dry ingredients alone and are often tightly sealed to contain the ingredients. Emissions from holding tanks are negligible compared to those from the mixers because both breathing and working losses are minimized. Breathing losses are minimized because holding tanks are generally located indoors at relatively constant temperatures and because the vessels typically are covered during storage to minimize coating composition changes through solvent loss and contamination. Working losses due to the filling of vessels are minimized because holding tanks typically are cleaned between uses; a clean, dry vessel does not have any vapor in the air space to be displaced as the coating is introduced. Emissions during the cleaning process are not regulated because of the inherent difficulties of control. Nevertheless, mills, holding tanks, and other equipment had been included in the proposed rule because it was determined that the controls mandated for the mixers could be easily applied to such equipment.

However, based on a reexamination of the information gathered during the development of the standards and on

the information presented by the commenter, EPA has decided that the standards should be applied only to mixers because they are the primary source of mix room emissions and the costs of controlling emissions from mills were not demonstrated. The EPA also agrees with the commenter that it is infeasible to duct emissions from portable equipment to a control device. However, during the actual mixing process, these portable containers are stationary, and ducting emissions to a control device is feasible. Thus, portable tanks, including holding tanks, are required to be covered and vented during those times that they are in use as mixing vessels. Covers alone are required when these tanks are in transit or at nonmixing locations.

Commenters questioned the technical feasibility of capturing and venting all VOC emissions from coating mix preparation equipment. One commenter noted that the need for access to the mixers makes sealed covers impractical. Also, according to the commenter, the total enclosure of and ducting emissions from all transfers from mixers to transfer containers, strainers, coaters, and other mixers is not feasible. Another commenter focused on the portable containers or "change cans" used specifically in the printing blanket industry for high-viscosity coatings that cannot readily be pumped beyond the shortest distances. According to the commenter, the change cans are generally covered during storage, movement, and mixing but because they are portable, cannot be ducted to a control device. Some VOC emissions from these containers are inevitable when covers are necessarily removed between the steps of the process.

A commenter pointed out that companies frequently use different sizes of mix equipment ranging from 5-gallon pails to 500-gallon portable tanks. Some are totally enclosed, while others are virtually impossible to enclose well enough to meet the proposed standard. The commenter maintained that companies would find it impossible to capture all emissions from mix equipment because of the nature of the process, cleanups, color changes, short runs, container handling, etc. The commenter also questioned the validity of EPA's contention that coating operations that apply urethane coatings, which are purchased premixed, do not use mix equipment. According to the commenter, all such operations use mix equipment either to adjust the specific properties of a batch of coating or to obtain the proper coating consistency.

A commenter pointed out that, while the proposal preamble states that BDT for mix equipment is the use of covers vented to a control device and that the format for the standard is an equipment format, the proposed standard does not mention equipment. The commenter stated that the requirement that all VOC emissions be captured and vented makes the proposed standard a performance standard, requiring a 100 percent capture efficiency. The commenter recommended that the performance standard language be deleted and that the standard (§ 60.742(a)(2) at proposal) be restated as an equipment standard.

The format of the standards for mix equipment was intended to be an equipment standard. But, as noted by the commenters, the use of the term "all" in the proposed standard implies 100 percent-capture, which has not been demonstrated in the polymeric coating industry. The standards for mixing vessels that serve coating operations that use at least 130 Mg/yr of VOC (and are associated with a coating operation with concurrent construction of a control device) have been revised to reflect actual workplace conditions. These mixing vessels are required to be covered during mixing and vented to a 95-percent efficient control device. The mixing vessels must be covered except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection if these activities cannot be carried out with the cover in place. Specifications for the covers have been added in § 60.743(c)(1).

The EPA does not believe that the use of portable containers or containers of varying sizes precludes the venting of emissions to a control device during the actual mixing process. In cases where portable tanks are used, the mixing apparatus remains stationary. Ductwork can be installed from this point to the control device. No evidence has been presented that small mixing vessels cannot be similarly equipped. The change to an equipment format with allowances for opening covers during periods of legitimate need addresses the concerns cited by the commenters.

The commenter's contention that sources applying urethane coatings employ mix equipment does not change the conclusions of the background study. Should these sources use mix equipment, the same cost factors that apply to mix equipment at other plants would apply. In fact, the higher value of the solvents saved by the application of control technology at this type of plant would improve the cost effectiveness of

control beyond that calculated for other types of polymeric coating plants. Because of the direction of this change, the impacts of the standards were not recalculated. When such sources use mixers, the beneficial impacts of the standards will be obtained with reasonable cost effectiveness and will far outweigh the negative impacts.

One commenter said that EPA appears to have incorrectly applied information on emissions from solvent storage tanks to emissions from mix tanks. The resulting estimate that vapor-tight covers with conservation vents would reduce emissions by 40 percent significantly understates the emission reduction that would be obtained. The commenter presented results from a bench-scale experiment that showed a simple cover not equipped with vapor-tight seals or a conservation vent would reduce emissions 74 percent and 96 percent when covering 87 percent and 100 percent of the vessel, respectively. The commenter contended that economic analysis would show that the small gain in emissions control achieved by a vapor-tight cover with a conservation vent as opposed to a simple cover would not be cost effective. The commenter suggested that the standard for mix equipment using at least 110 m³/yr but less than 150 m³/yr of VOC (§ 60.742(a)(3) at proposal) be revised to require only a cover that encloses at least 95 percent of the opening and that must 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 the cover in place.

The EPA agrees that the improvement in control efficiency on mix equipment to be gained from a vapor-tight cover with a conservation vent compared to that from a simple tight-fitting cover is insignificant. The chief benefit to be gained from conservation vents is the control of "breathing losses" resulting from diurnal temperature changes. Because mix equipment is not normally exposed to such changes in this industry, the requirement that covers be sealed and equipped with conservation vents has been dropped. However, EPA does not agree that the emission reduction ascribed to covers is significantly underestimated. The experiment conducted by the commenter explored only evaporative losses during the mixing process. This treatment neglects the impact of the "working losses" that occur due to the filling and emptying of a vessel that contains a solvent-saturated air space. An analysis of cover efficiency was carried out for

mix equipment in the magnetic tape manufacturing industry, and the results of this analysis are considered representative of the polymeric coating industry as well. The efficiency of covers was determined by this analysis to be 40 percent.

The standards for mixing vessels that use at least 95 Mg/yr (110 m³/yr) but less than 130 Mg/yr (150 m³/yr) (§ 60.742(c)(3)) of VOC has been revised to require the equipment to be covered at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with the cover in place. The same requirements have been extended to mix equipment at facilities using at least 130 Mg/yr of VOC that are associated with coating operations without concurrent construction of a control device. Specifications for the covers are the same as those listed under § 60.743(c)(1) for mix equipment serving coating operations that use at least 130 Mg/yr. The cost of compliance with the revised standard will be less than that associated with the use of covers and conservation vents, which were cost effective under the proposed standard. This is because the cost of covers is expected to be included in the purchase price of new equipment, so that there is no incremental cost associated with the emission reduction.

D. Control Costs

One commenter claimed that the cost of totally enclosing print blanket coating equipment was seriously underestimated. According to the commenter, the nature of these operations requires constant operator access to the coater; therefore, a small enclosure immediately around the coating application/flashoff area cannot be used. The commenter further stated that a total room enclosure is infeasible for existing plants because there are typically multiple lines in a single large room with many openings and ventilation systems. The remaining option is to enclose the equipment within a smaller room of sufficient size to allow the constant presence and mobility of equipment operators. The commenter stated that, for worker safety, the concentration of solvent within this enclosure must be limited to 100 parts per million by volume and that the only option for achieving this low solvent concentration would be to flush high volumes of air through the enclosure.

The commenter presented an analysis of the costs and cost effectiveness of this approach. The commenter's analysis was based on the assumption that the

only way to protect workers within a total enclosure is to dilute the emissions to the level considered safe for personnel. The resulting airflow rate required an entirely new carbon adsorption system at a cost of \$2.5 million to control the emissions. The capital cost of this system, coupled with the high operating costs associated with maintaining a high removal efficiency from such a dilute SLA stream, resulted in an unreasonable cost-effectiveness value.

The EPA believes that the commenter's assumption is unrealistic and erroneous. In practice, localized pickup points (hoods or other enclosures) should be placed within a total enclosure to both protect any workers that must be inside and reduce the ventilation rate to a level such that the air from the enclosure can be used as makeup air in the drying oven. Thus, a new carbon adsorption system would not be required, and the composition of the SLA stream ducted to the control device would be similar to that assumed in EPA's analyses.

The analysis presented by the commenter was reworked using more realistic assumptions. Using the commenter's values for annual solvent use, electricity and steam costs, and the value of reclaimed solvent and the factors from EPA's original analysis for adsorber steam and electricity demand, the cost effectiveness of moving from the source's current control level to the level required by the standards is less than \$200 per ton of additional VOC recovered. The EPA considers this to be a reasonable value. Thus, EPA believes that the costs associated with totally enclosing equipment such as that operated by the commenter were not underestimated.

E. Compliance Provisions

One commenter sought confirmation that under the proposed regulations compliance could be demonstrated with an "approved" room enclosure around the coating equipment and data that indicate proper operation of collecting equipment. The commenter's interpretation is that the design of the room enclosure will be approved by EPA on a case-by-case basis and that the major requirement for approval is that the room be under negative pressure and the exhaust which produces this negative pressure be vented to a 95 percent efficient control device. Data to prove proper operation of the control device would be taken from continuous recordings of the pollutant concentration in the gas vented from the carbon beds.

The final standards have been revised to clarify that the use of certain equipment, i.e., a total enclosure and a 95 percent efficient control device is available as an alternative standard to the 90 percent emission reduction standard. In other words, the owner or operator may choose to comply with either the emission reduction standard or the alternative standard. The EPA also has revised the compliance provisions to include specifications for a total enclosure. Case-by-case approval by the Administrator is not required if these specifications are met. After the initial determination of compliance, an approved parameter (such as fan amperage or duct flow rates) shall be monitored to demonstrate proper operation of the vapor capture system. Also, the control device must be monitored in accordance with the same provisions that apply when the two-part gaseous emissions test is used to demonstrate compliance. If the control device is a carbon adsorber, monitoring of the pollutant concentration in either the control device outlet stream or both inlet and outlet streams is required.

In addition, the compliance provisions for coating operations meeting the emission reduction standard have been clarified and revised since proposal. In the final standards, one method of demonstrating compliance is to perform a two-part gaseous emissions test to measure both capture efficiency and control device efficiency. Compliance is demonstrated if the product of these two efficiencies is equal to or greater than 0.90. This compliance method is available to all affected facilities. An alternative to performing the gaseous emissions tests is performing a liquid-liquid material balance. However, this compliance provision has limited applicability. A liquid-liquid material balance can only be used when a single coating operation is vented to a dedicated control device (i.e., the control device may not be used to control emissions from any other emission source, including mix equipment.) This compliance provision is most likely to be applicable for facilities with mix equipment that is not required to be vented to the control device. The liquid-liquid material balance compliance provisions include two options. The first option requires that a liquid-liquid material balance be performed for each nominal 1-month period. When using this option, no monitoring is required beyond that necessary to perform the material balance. The second option, which has been added since proposal, requires performing a one-time material balance over 3 to 7 days followed by

continuous monitoring. The number of days for the performance test is selected by the operator and shall provide data that represent the plant's typical coating practices. The monitoring requirements are the same as those specified for the two-part gaseous emissions test and alternative standard. This second option may be attractive for facilities that cannot or do not want to conduct the continuous, detailed monthly liquid material balance measurements that are required for an accurate balance (e.g., VOC applied at the coater, retained VOC [optional], VOC waste losses).

F. Test Methods and Monitoring

One commenter stated that the 93 percent reduction required of coating operations will be unattainable because of the inherent vagaries of the parameters that must be measured to perform the liquid material balance compliance test. The commenter noted that the method requires measurement techniques that are not currently used. The commenter also stated that the measurement techniques and formula for the control device efficiency in the gas balance compliance test are realistic but that the formula for capture efficiency appears to assume that all uncontrolled solvent vapors will be discharged through a measurable point and that there will be no "stray" fugitive emissions.

The EPA acknowledges that short-term variations in process conditions could affect a facility's ability to perform the measurements required to demonstrate compliance in the short term by means of a liquid material balance. For this reason, a relatively long averaging time (in this case, 1 month) is available to allow for a representative variety of coatings and products, as well as to reduce the impact of short-term variations due to process upsets, solvent spills, and variable amounts of solvent in use in the process. Facilities should already keep at least some of the required records as part of normal business practices and should be able to negotiate any specific problems faced by an individual facility with the enforcing agency. As stated in section E, facilities that find the recordkeeping and measurements burdensome may opt to conduct the short-term liquid balance or gas-phase test to demonstrate compliance. In any case, the alternative standard, use of a total enclosure and 95 percent efficient control device, is available to facilities that do not wish to perform the testing and measurements associated with the capture portion of the emission reduction standard. Because EPA has determined that facilities can conduct

the measurements required for a liquid material balance and because several alternatives are available, the month-long liquid material balance has been retained in the final standards.

In response to the commenter's other concern, it appears that the commenter has misinterpreted the requirements of the gaseous emissions compliance test. The standard requires (not assumes) that all uncontrolled VOC emissions, including solvent vapors, will be passed through stacks suitable for measurement. To carry out the compliance test, the source must ensure that all VOC emissions will either be directed to the control device or be measured at the exit stack of a temporary enclosure or at all room exhaust points. In other words, there should be no "stray" fugitive emissions that are not accounted for in the compliance test.

One commenter recommended that the standards include a plant-wide VOC recovery of 85 percent as an alternative method of demonstrating compliance and that this is justified because of its simplicity, low expense, and effectiveness. The commenter said that the standards regulate some processes at different levels and leave other emissions, such as those from storage, cleaning, and transfers, unregulated. The commenter believes that enforcement officers would prefer a plant-wide material balance and said that enforcement officers routinely ask for this information along with the data required by a particular standard. According to the commenter, the solvent disbursed to the plant can be readily measured by metering withdrawals from the solvent tanks. Also, solvent purchases, which are always measured accurately, are a direct measure of emissions because recovered solvent is replaced into inventory. Thus, the plant's VOC recovery efficiency can be calculated as the difference between VOC used and VOC (including solvent) purchased, divided by VOC used. Because some emissions in the plant would be unregulated, the commenter concluded that the standards assume and accept a plant-wide recovery of less than 93 percent. The commenter suggested that EPA determine an appropriate recovery level under the final standard. Using several years of data from a modern facility that nearly conforms with the standard, the commenter concluded that a reasonable plant-wide recovery level for a new plant designed to comply with the standards would be 85 percent.

The option of demonstrating compliance using a plant-wide material balance has not been incorporated into

the final standards. Section 111 of the Clean Air Act requires that the standard be based on BDT. Compliance methods must demonstrate that the affected facility meets the control efficiency set by BDT. If a plant-wide material balance were used to demonstrate compliance for polymeric coating operations, a plant-wide control efficiency that ensures 90 (formerly 93) percent control of VOC emissions from an affected coating operation(s) would be required. Without extensive testing to apportion emissions from all VOC sources in the plant, a plant-wide material balance demonstrating less than 90 percent control does not ensure that the affected facility initially achieves 90 percent control or maintains 90 percent control over each month of operation.

It is not feasible to select a plant-wide VOC recovery value because of the wide range of potential emission points that differ from plant to plant. These include existing coating operations and mix equipment, solvent storage tanks, and cleanup operations. With the variation in emissions from such sources, it is not possible to select a single plant-wide recovery efficiency value that would reflect BDT, yet be achievable in all cases. Even if such a level were established, it would be impossible to tell whether the affected facilities within the plant were in compliance with the standards applicable to them individually. For these reasons, a plant-wide material balance has not been added to the standards as an alternative method of demonstrating compliance.

One commenter noted the unreliability and the expense of maintaining a continuous monitoring device for a carbon adsorber. The commenter stated that these monitors work well for short-term measurements but are not reliable for continuous measurements because the high water content of the carbon adsorber exhaust immediately after desorption damages the monitors. Thus, the industry may have difficulty maintaining continuous monitoring over the long term as required in the proposed regulation.

The EPA must have some means to determine whether proper carbon adsorber operation and maintenance practices are being carried out. The monitoring of organic compounds is the only parameter that has been identified that adequately relates to adsorber performance. Without these monitors, sources are unable to detect when they may be operating out of compliance. Tests on existing systems show that the lack of proper monitoring is a major cause of poor performance of carbon

adsorber systems. Discussions with carbon adsorber experts indicated that continuous monitors are available that are reliable when the proper calibration and maintenance procedures are used.

G. Wording of the Regulation

One commenter recommended converting all references to m^3 to pounds. This would be consistent with the units normally used by the industry for recordkeeping, solvent purchases, and pollution control system and equipment specifications.

Consistent with U.S. government policy, EPA has chosen the International System of Units as the format for regulations. However, EPA has revised all references in the final standards of m^3 to Mg to be consistent with the mass reporting basis typically used by industry and enforcing agencies. Reporting emissions and VOC usage rates on a mass basis rather than a volume basis also avoids the need to select average or typical densities of materials when reporting general values.

One commenter suggested that the volumetric flow rate be stated on a wet basis rather than a dry basis because, according to a contact at EPA, Method 25A gives results in parts per million by volume on a wet basis.

The commenter is correct. Method 25A gives results in terms of parts per million by volume on a wet basis; therefore, the volumetric flow rate also should be stated on a wet basis when the method is used. The final standard has been corrected. However, volumetric flow rates used in conjunction with Method 25 concentration measurements are to be expressed in dry standard cubic meters per hour.

One commenter stated that, for consistency with other NSPS and State regulations, coating mix preparation equipment should not be included in the definition for a coating line and that the term "coating line" was unnecessary since "coating operations" and "coating mix preparation equipment" are described. The commenter suggested changing all references to "coating operations" to "coating lines" since these two terms, by his definition, are synonymous.

In the proposed standards, coating line is defined as "the coating operation(s) and coating mix preparation equipment that service the coating operation(s)." According to the commenter, the term coating line is commonly used interchangeably with coating operation. To avoid confusion, the term "coating line" is not used in the final standard. The term "coating operation" has been retained in order to

maintain consistency with the proposal BID and preamble.

One commenter recommended eliminating references to baking, curing, and polymerizing from the definition for drying oven. Although the preamble makes clear that the curing oven is not covered by the standard, the proposed definition for "drying oven" suggests that the curing oven is included.

The definition of drying oven has been changed to "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." By eliminating references to baking, curing, and polymerizing, this revised definition makes it clear that the standard does not apply to chambers in which drying is not performed. The definition also makes it clear that the standard does apply to any chamber within which drying is performed, regardless of the other processes performed in the chamber. This change is consistent with the fact that cure volatiles resulting from separate curing ovens are expected to be minimal in this industry, or to occur offsite, and thus, are not available for control.

One commenter recommended changing the definition for solvent used from "the amount of solvent delivered to the coating mix preparation equipment of the affected facility" to "the net quantity consumed in the coating operation line." According to the commenter, coating mixes are typically prepared in greater quantities than required for a specific production run. The excess coating may be recycled, which would result in double counting, or disposed as a waste material.

"Solvent used" was defined at proposal as the amount of solvent delivered to the coating mix preparation equipment because: (1) This is the simplest and most direct measurement point, and (2) it reflects the quantity used in determining the cutoff. The commenter's suggested definition of "solvent used" would make accurate measurement considerably more difficult because sampling and analysis of the applied coating would be required. Also, the commenter's suggested definition does not take into account VOC emitted during mixing, which were included in the computation of the solvent-use cutoff. The cutoff was computed by determining the minimum quantity of applied VOC that could be cost-effectively controlled and then adjusting this volume to account for VOC emitted before the coating reaches the applicator of the affected coating operation.

The proposed definition was not intended to result in double counting.

However, it may require the owner or operator to keep careful records of VOC use in cases where prepared coatings are not used immediately.

To clarify the meaning of this term, the definition has been changed to "VOC used." The amount of "VOC used" should be computed as the sum of: (1) The VOC delivered to the mix equipment from storage, (2) any VOC added after initial formulation is complete (e.g., dilution solvent added at the coating operation), and (3) the VOC content of any ingredients prepared off the plant site that are used in the preparation of coatings. When excess coating is recycled for use in a later coating run, the VOC it contains will not be counted a second time. When premixed coatings or ingredients are used in the formulation of coatings, only the VOC content of coatings prepared off the plant site must be included in the volume of VOC used. Should a source reclaim the VOC from excess coatings, the VOC will enter the recovery system just as if it were applied to a substrate. When this reclaimed VOC is reused, it will be properly counted toward the volume of VOC used. It is true that coatings disposed as waste materials were not considered when the annual VOC-use cutoff was calculated. However, EPA believes that such wastes should be minimized. Thus, to provide an incentive to minimize these wastes, no change has been made to this aspect of the definition.

A change has been made to the proposed definition to account for facilities that purchase premixed coatings or other ingredients that contain VOC. The new definition of "VOC used" reads "the amount of VOC delivered to the coating mix preparation equipment of the affected facility (including any contained in premixed coatings or other ingredients prepared off the plant site) for the formulation of polymeric coatings to be applied to supporting substrates at the coating operation, plus any VOC 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.

A commenter suggested redefining the symbol M_r used in Equation 1 (as proposed) as the total VOC recovered before purification because the proposed definition does not allow for VOC losses during separation/purification.

As proposed, the definition of " M_r " does not specify whether the recovered

VOC is to be measured before or after separation/purification. The 93 percent recovery efficiency required to demonstrate compliance using Equation 1 was determined considering the total VOC recovered by the carbon adsorption system. It did not include any losses from separation/purification. Therefore, EPA requires that " M_r " be measured after adsorption. There may be cases, however, where it is more convenient to measure " M_r " after separation/purification. Thus, a measurement point for " M_r " has not been specified, but it is to be established when the compliance procedures are approved. This is explained in § 60.743(a)(3)(vi), which has been added to the compliance provisions.

A commenter suggested redefining the term RS_i in Equation 1 (as proposed) to include all VOC, not just the solvent, retained on the substrate. A portion of the VOC in some coating formulations is monomer that is retained in the substrate either as free monomer or polymer. The suggested definition change would make it clear that any monomer retained in the substrate would be included in the term RS_i . Another commenter recommended that the provisions of justifying the need for retained solvent be broadened to include economic and technical feasibility concerns.

In response to the commenter's suggestion, the definition of RS_i has been changed to "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." Without this change, coatings that release reaction by-products when tested by Method 24 would indicate the presence of some VOC which may not be available for recovery by the VOC recovery system unless the coating is exposed to a similar temperature within the oven. If the amount of monomer retained on the substrate is significant, this may affect a source's ability to demonstrate compliance. By changing "solvent" to VOC in the definition of RS_i , enables the source to account for the amount of VOC retained on the substrate. The source is responsible for demonstrating the quantity retained on the substrate.

In response to the other commenter, EPA notes that the intent of the retained solvent (now VOC) provision as proposed was to ensure that all facilities take steps to minimize uncontrolled emissions from retained VOC whenever possible. The exemption for retained VOC was written to permit the facility as much flexibility as possible in demonstrating to the Administrator the

level of, and need for, retained VOC. However, EPA has revised this requirement to minimize the burden on both enforcement and plant personnel. The revised requirement eliminates the need for the plant to justify the need for retained VOC if the measured value of RS_i is less than or equal to 6 percent by weight of the liquid VOC applied. A limited survey of the industry indicated that 6 percent is a common breakpoint in retained VOC values and would encompass the majority of plants reporting retained VOC. Plants reporting RS_i values above 6 percent by weight of the liquid VOC applied would still be required to demonstrate to the satisfaction of the Administrator that the retained VOC is required for product quality or to meet product specifications. In all cases, plants would be required to submit for approval data on the specific measurement techniques used to determine RS_i .

VIII. Administrative

The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docket is a dynamic file because material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to identify and locate documents readily 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)).

The effective date of this regulation is September 11, 1989. Section 111 of the Clean Air Act provides that standards of performance or revisions thereof become effective upon promulgation and apply to affected facilities, the construction or modification of which was commenced after April 30, 1987, the date of proposal.

As prescribed by section 111, the promulgation of these standards is based on the Administrator's determination (40 CFR 60.16, 44 FR 4922, dated August 21, 1979) that industrial fabric coating contributes significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The polymeric coating of supporting substrates category includes the fabric coating category. 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.

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 reporting requirements.

Section 317 of the Clean Air Act requires the Administrator to prepare an economic impact assessment for any new source standard of performance 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 the formulation of the standards to ensure that cost was carefully considered in determining BDT. The economic impact assessment is included in the BID for the proposed standards.

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 No. 2060-0181.

Public reporting burden for this collection of information is estimated to average 3 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. Initial performance testing is estimated to average 100 hours per occurrence.

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 St., SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Paperwork Reduction Project (2060-0181), Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

Under Executive Order 12291, EPA is required to judge whether a regulation is a "major rule" and, therefore, subject to the requirements of a regulatory impact analysis (RIA). The EPA has determined that this 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 a "major rule." The cost increases resulting from the

NSPS will be small and will have an insignificant impact on the industry. The EPA has concluded, therefore, that this regulation is not a "major rule" under Executive Order 12291.

The Regulatory Flexibility Act of 1980 requires the identification of potentially adverse impacts of Federal regulations upon small business entities. The Act specifically requires the completion of a Regulatory Flexibility Analysis in those instances where small business impacts are possible. Because these standards impose no adverse economic impacts, a Regulatory Flexibility Analysis has not been 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.

List of Subjects in 40 CFR Part 60

Air pollution control,
Intergovernmental relations,
Incorporation by reference, Polymeric
coating of supporting substrates (SIC
Codes 2295, 2296, 2394, 3041, 3069, and
3293), Reporting and recordkeeping
requirements.

Dated: August 28, 1989.

F. Henry Habicht,
Acting 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: 42 U.S.C. 7401, 7411, 7414, 7416, 7601.

2. By adding a new subpart VVV to read as follows:

Subpart VVV—Standards of Performance for Polymeric Coating of Supporting Substrates Facilities

Sec.

- 60.740 Applicability and designation of affected facility.
- 60.741 Definitions, symbols, and cross-reference tables.
- 60.742 Standards for volatile organic compounds.
- 60.743 Compliance provisions.
- 60.744 Monitoring requirements.
- 60.745 Test methods and procedures.
- 60.746 Permission to use alternative means of emission limitation.
- 60.747 Reporting and recordkeeping requirements.
- 60.748 Delegation of authority.

Subpart VVV—Standards of Performance for Polymeric Coating of Supporting Substrates Facilities

§ 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**" means the area of each natural draft opening (k) in a total enclosure, in square meters.

"**C_{ai}**" means the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

"**C_{di}**" means the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

"**C_{di}**" means 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_{ek}**" means 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}**" means 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}**" means the concentration of VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

"**E**" means the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

"**F**" means the VOC emission capture efficiency of the vapor capture system achieved for the duration of the emission test (expressed as a fraction).

"**FV**" means the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

"**H_v**" means the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

"**H_{av}**" means the carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

"**M_a**" means 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**" means the total mass (kg) of VOC recovered for a nominal 1-month period.

"**Q_{ai}**" means 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_{bi}**" means 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}**" means 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_{ek}**" means 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}**" means 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}**" means 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}**" means 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_{outj}**" means 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**" means the overall VOC emission reduction achieved for the duration of the emission test (expressed as a fraction).

"**RS_i**" means 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_{ol}" means 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 § 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.	(a)(1), (a)(2), (a)(3), or (a)(4); (b), (e).
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 *	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), (e), (f), (g), (h).
(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)	
(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)(8).
(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).
(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.			

*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 efficient (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:

$$E = \frac{\sum_{i=1}^n Q_{bi}C_{bi} - \sum_{j=1}^n Q_{aj}C_{aj}}{\sum_{i=1}^n Q_{bi}C_{bi}} \quad (\text{Equation 1})$$

(v) Determine the efficiency (F) of the vapor capture system by Equation 2:

$$F = \frac{\sum_{i=1}^n Q_{di}C_{di}}{\sum_{i=1}^n Q_{di}C_{di} + \sum_{k=1}^p Q_{fk}C_{fk}} \quad (\text{Equation 2})$$

(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:

$$H_v = \frac{Q_{gv}C_{gv} - Q_{hv}C_{hv}}{Q_{gv}C_{gv}} \quad (\text{Equation 3})$$

(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:

$$H_{sys} = \frac{\sum_{v=1}^g H_v Q_{hv}}{\sum_{v=1}^g Q_{hv}} \quad (\text{Equation 4})$$

(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.

$$R = \frac{M_r}{\sum_{i=1}^n [W_{oi}M_{ci} - RS_i]} \quad (\text{Equation 5})$$

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_i 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:

$$FV = \frac{\sum_{j=1}^n Q_{out\ j} - \sum_{i=1}^p Q_{in\ i}}{\sum_{k=1}^q A_k}$$

(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 through 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 polyethylene 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_{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), (a)(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 (c)(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), (a)(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), (a)(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), (a)(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), (a)(2), (a)(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 enclosure 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.

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