of $17,600 except as provided in paragraph (e) of this section. A petition or request to renew or extend such temporary tolerance or temporary exemption shall be accompanied by a fee of $2,500.

(e) A petition or request for a temporary tolerance for a pesticide chemical which has a tolerance for other uses at the same numerical level or a higher numerical level shall be accompanied by a fee of $8,800 plus $700 for each raw agricultural commodity on which the temporary tolerance is sought.

(f) Each petition or request for repeal of a tolerance shall be accompanied by a fee of $5,500. Such fee is not required when, in connection with the change sought under this paragraph, a petition or request is filed for the establishment of new tolerances to take the place of those sought to be repealed and a fee is paid as required by paragraph (a) of this section.

(g) If a petition or a request is not accepted for processing because it is technically incomplete, the fee, less $1,100 for handling and initial review, shall be returned. If a petition is withdrawn by the petitioner after initial processing, but before significant Agency scientific review has begun, the fee, less $1,100 for handling and initial review, shall be returned. If an unacceptable or withdrawn petition is resubmitted, it shall be accompanied by the fee that would be required if it were being submitted for the first time.

(h) Each petition or request for a crop group tolerance, regardless of the number of raw agricultural commodities involved, shall be accompanied by a fee equal to the fee required by the analogous category for a single tolerance that is not a crop group tolerance, i.e., paragraphs (a) through (f) of this section, without a charge for each commodity where that would otherwise apply.

(i) Objections under section 408(d)(5) of the Act shall be accompanied by a filing fee of $2,200.

(j)(1) In the event of a referral of a petition or proposal under this section to an advisory committee, the costs shall be borne by the person who requests the referral of the data to the advisory committee.

(2) Costs of the advisory committee shall include compensation for experts as provided in § 180.11(c) and the expenses of the secretariat, including the costs of duplicating petitions and other related material referred to the committee.

(3) An advance deposit shall be made in the amount of $22,000 to cover the costs of the advisory committee. Further advance deposits of $22,000 each shall be made upon request of the Administrator when necessary to prevent arrears in the payment of such costs. Any deposits in excess of actual expenses will be refunded to the depositor.

(k) The person who files a petition for judicial review of an order under section 408(d)(5) or (e) of the Act shall pay the costs of preparing the record on which the order is based unless the person has no financial interest in the petition for judicial review.

(l) No fee under this section will be imposed on the Inter-Regional Research Project Number 4 (IR–4 Program).

(m) The Administrator may waive or refund part or all of any fee imposed by this section if the Administrator determines in his or her sole discretion that such a waiver or refund will promote the public interest or that payment of the fee would work an unreasonable hardship on the person on whom the fee is imposed. A request for waiver or refund of a fee shall be submitted in writing to the Environmental Protection Agency, Office of Pesticide Programs, Registration Division (TS–767C), Washington, DC 20460. A fee of $1,100 shall accompany every request for a waiver or refund, except that the fee under this sentence shall not be imposed on any person who has no financial interest in any action requested by such person under paragraphs (a) through (k) of this section. The fee for requesting a waiver or refund shall be refunded if the request is granted.

(n) All deposits and fees required by the regulations in this part shall be paid by money order, bank draft, or certified check drawn to the order of the Environmental Protection Agency. All deposits and fees shall be forwarded to the Environmental Protection Agency, Headquarters Accounting Operations Branch, Office of Pesticide Programs (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. The payments should be specifically labeled "Tolerance Petition Fees" and should be accompanied only by a copy of the letter or petition requesting the tolerance. The actual letter or petition, along with supporting data, shall be forwarded to the Environmental Protection Agency, Office of Pesticide Programs, Registration Division, Washington, DC 20460. A petition will not be accepted for processing until the required fees have been submitted. A petition for which a waiver of fees has been requested will not be accepted for processing until the fee has been waived or, if the waiver has been denied, the proper fee is submitted after notice of denial. A request for waiver or refund will not be accepted after scientific review has begun on a petition.

(o) This fee schedule will be changed annually be the same percentage as the percent change in the Federal General Schedule (GS) pay scale. In addition, processing costs and fees will periodically be reviewed and changes will be made to the schedule as necessary. When automatic adjustments are made based on the GS pay scale, the new fee schedule will be published in the **Federal Register** as a final rule to become effective thirty days or more after publication, as specified in the rule. When changes are made based on periodic reviews, the changes will be subject to public comment.

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January 8, 1986

Part IV

# Environmental Protection Agency

40 CFR Parts 202 and 205

**Noise Abatement Programs: Motor Carriers Engaged in Interstate Commerce; and Medium and Heavy Trucks (Transportation Equipment); Effective Date Deferral; Final Rule**

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Parts 202 and 205

[OAR FRL 2934-9]

### Noise Standards; Motor Carriers Engaged in Interstate Commerce; Transportation Equipment Noise Emission Controls; Medium and Heavy Trucks

**AGENCY:** Environmental Protection Agency.

**ACTION:** Final rule.

**SUMMARY:** By this action, the Environmental Protection Agency concurrently amends two noise regulations for medium and heavy trucks, as follows:

1. Defers from January 1, 1986 to January 1, 1988, the effective date of the 80 decibel (dB) noise standard under 40 CFR Part 205, Subpart B, for newly manufactured medium and heavy trucks having GVWR[1] greater than 10,000 pounds; and

2. Reduces by 3 decibels (3dB) the noise limits under 40 CFR Part 202, Subpart B, for motor carriers engaged in interstate commerce. The revised not-to-exceed sound levels for 1986 and later model year vehicles, having a GVWR greater than 10,000 pounds, are as follows: 83 dB at speeds of 35 MPH or less; 87 dB at speeds above 35 MPH; and 85 dB when the truck engine is accelerated to maximum engine speed with the vehicle stationary.

These two closely related actions, promulgated in response to petitions from the truck industry, are expected to permit coordinated design and engineering efforts by manufacturers to comply with both noise and emissions control requirements. Although the deferral of the 80-dB standard will cause some loss of near-term health and welfare benefits, the reduction of the in-use noise limits will provide counterbalancing short-term benefits and substantial long-term benefits.

**DATES:**

1. Effective January 8, 1986.

2. The 80 dB noise standard for medium and heavy trucks applies to trucks manufactured on or after January 1, 1988.

3. The revised noise limits for trucks operated by motor carriers engaged in interstate commerce applies to all such trucks of 1986 and later model years.

**FOR FURTHER INFORMATION CONTACT:** Kenneth E. Feith, Office of Air and Radiation (ANR-443), U.S. Environmental Protection Agency, Washington, DC 20460, (202) 382-7400.

**SUPPLEMENTARY INFORMATION:**

### I. Introduction

These two closely related actions are promulgated in response to petitions [2] for a delay of the medium and heavy truck (MHT) 80 dB noise standard which were submitted by the International Harvester Company, the Ford Motor Company, the General Motors Corporation, and the American Trucking Association.

The petitioners requested additional time to permit the coordination of otherwise duplicative design, engineering and testing efforts necessary to comply with both the MHT 80 dB noise standard and EPA's nitrogen oxide ($NO_x$) and particulate emission standards for heavy-duty engines that were promulgated on March 15, 1985 (50 FR 10606).

The Administrator has concluded that the petitioners' request has merit and that the granting of a two-year deferral should significantly reduce duplicative design, engineering and testing, thereby producing economic benefits that should accrue to the public. However, such deferral will result in a delay in health and welfare benefits to that segment of the nation's population that is regularly exposed to truck noise. To reduce the potential near-term loss of benefits, due to the delayed entry into the fleet of the MHT 80 dB truck, the Administrator is concurrently prescribing lower-in-use noise emission limits for 1986 and later model year trucks operated by motor carriers engaged in interstate commerce.

With lowered in-use standards, the deferral of the MHT 80 dB noise standard should have only a minor adverse impact on near-term (1986 through 1988) health and welfare benefits. The more stringent in-use noise emission standards should have a very beneficial effect on long-term health and welfare by significantly restricting the permitted increase (degradation) in the noise emissions of 1986 and later model year trucks.

The legal basis and factual information and conclusions which support promulgation of these regulations were set forth in substantial detail in the Notice of Proposed Rulemaking published in the **Federal Register** on June 19, 1985 (50 FR 25516).

### II. Summary of Comments Received

The Agency received a total of sixteen responses to its proposal to amend the two noise regulations for trucks (50 FR 25516). The comments may be categorized as follows:

1. Six respondents supported the regulatory amendments as proposed.

2. Two supported the amendments with minor (and differing) reservations regarding the proposed reduction of the noise limits for interstate motor carriers (IMC). (The issues addressed are discussed in later paragraphs.)

3. Three respondents expressed support for the two-year deferral of the 80 dB MHT Standard but were silent about the IMC amendment.

4. One expressed opposition to the two-year deferral of the 80 dB MHT Standard (and implied support of the lower IMC noise limits).

5. Two respondents expressed support for lower IMC noise limits (but were silent with regard to the deferral of the MHT standard). One would prefer IMC noise reductions beyond those proposed by the Agency, as well as applying the revised IMC limits to all post-1977 trucks.

6. Two respondents expressed opposition to lowering the IMC noise limits.

In summary, thirteen of the sixteen respondents expressed support for all or part of the proposed amendments and three expressed opposition to one part or another. Of the latter three, two were opposed to tightening the IMC standards and one was opposed to deferring the 80 dB MHT standard.

Substantive issues raised in the various docket responses are discussed below:

1. With respect to the two-year deferral of the 80 dB MHT standard, the only issue raised in opposition was the assertion that a delay of the 80 dB standard may lead to further deterioration of the hearing of Americans.

The Agency's position is that truck noise in the community is a source of annoyance, and may cause speech and sleep interference, but it is not a significant contributor to hearing loss of the general public. Data from the truck noise impact model, summarized in a technical analysis report,[3] show that about one percent of the population exposed to truck noise is subject to day-night average sound levels ranging from 75 to 85 decibels. Such exposure, if continued over 40 years, would lead to an average increase of less than 10 decibels in hearing threshold at 4000

[1] GVWR—Gross Vehicle Weight Rating

[2] EPA Docket Number OPMO-0184, Items 1 thru 4.

[3] Draft Technical Analysis—Alignment of the Interstate Motor Carrier Noise Regulation (with the Medium and Heavy Truck Noise Standard) U.S. Environmental Protection Agency, June 1982 (Docket OPMO-0184, Item #27).

Hertz, the most sensitive frequency band for the ear. A change of 5 decibels is not considered significant. Since the estimated increase in significant population exposed to truck noise is about two percent for the two-year deferral, the maximum potential effect of that deferral is an increase of two-hundredths of one percent of the exposed population that would potentially experience a just-detectable loss of hearing acuity. Therefore, we do not expect that deferring the MHT 80 dB standard for two years will impose a significant risk of hearing damage. Further, we believe that the long-term benefits of the reduced IMC noise levels will tend to compensate for the short-term loss of benefits due to the two-year deferral of the MHT 80 dB standard.

The remaining substantive issues raised in the docket pertain to the lowering of the IMC noise limits.

2. The respondents in favor of extending the reduced IMC limits to all post-1977 trucks (i.e., those vehicles subject to the 83 dB standard for newly manufactured trucks) contend that such an extension would provide greater health and welfare benefits by decreasing noise exposure of the population.

The Agency agrees that application of the standard to all post-1977 trucks would provide increased benefits. However, the Agency believes that such extended applicability would impose unexpected and unreasonably high costs on a substantial number of truck users. This could be particularly true for small enterprises that are second and third owners of the post-1977 trucks as these trucks find their way into the used truck market. These purchasers/users, who try to economize by buying used trucks, could be confronted with substantial expenditures to repair or replace noise-control hardware, since the original owners might have performed only that maintenance necessary to meet the prior, less stringent IMC standard. EPA has therefore decided to extend the new IMC standards only to 1986 and later model year trucks, as proposed.

3. Two respondents expressed concern that the reduced IMC noise limits could adversely affect a number of tire dealers and retreaders by discouraging sales of crossbar tires (which are noisier than radial tires). Because the noise contributed by crossbar tires at highway speeds is close to the proposed new IMC limits, one commenter considered the proposed new limits to be unreasonable.

The Agency finds that the truck industry generally has shown a shift to the quieter radial tires, away from crossbar tires. This shift has evolved over a period of time partly because of the noise requirements, but more particularly because of the greater fuel economy resulting from radial tires. Crossbar tires with "aggressive" tread design are used to provide greater traction for the drive wheels in mud and under wet and snowy road conditions. We believe they will continue to be used for such applications. In light of the gradual shift from crossbar tires, as tempered by their continuing use for specific applications, the reduced IMC limits should result in minimal economic impact on tire dealers and retreaders. Since crossbar tires are only effective on the drive wheels, truck operators can minimize the potential noise contribution of such tires by using them only on drive wheels. Thus, by properly maintaining their trucks and appropriately restricting use of crossbar tires, the Agency believes that operators should be able to comply with the new IMC limits. As indicated in the NPRM, under "Truck Fleet Noise Levels", there is a 4 dB increase allowed for tire noise at speeds over 35 mph; 98 percent of the current fleet already is in compliance with the new limits.

4. One respondent, while supporting lower in-use noise limits, argues that:

a. Such lower limits are not needed to offset losses in benefits due to the deferral of the 80 dB MHT standard because no loss is anticipated;

b. The proposed limits should not apply to model year 1986 and 1987 trucks, as these trucks, manufactured to meet an 83 dB standard, will be required to retain virtually "as-new" noise levels.

c. Truck noise levels increase with mileage but are not related to maintenance. Therefore, the IMC noise limits should permit "reasonable" degradation. To reflect this factor, either the IMC noise limits should be 1 dB higher than proposed, or the proposed limits should apply only to post-1987 trucks (i.e., those manufactured to an 80 dB standard).

The Agency responds as follows:

a. EPA's analysis (Docket OPMO–0184, Item 27) clearly shows that the two-year deferral of the 80 dB MHT standard will result in a loss (albeit a modest one) in health and welfare benefits. The commenter provides no data to support its contention to the contrary. The expectation of such loss is one of the major reasons for reducing the IMC noise limits; the latter action will provide offsetting health and welfare benefits to the public, although the gains will accrue in a different time frame.

b. Data supplied to the Agency in manufacturers' compliance reports show that new trucks manufactured to meet the 83 dB noise standard average 2 dB or more below the standard, with the vast majority entering the fleet at levels below 82 dB. In addition, an independent study on truck noise degradation[4] indicates that the noise level increase before overhaul (generally at 100,000 miles) does not exceed one decibel on average. Consequently, EPA expects that model year 1986 and 1987 trucks, if properly maintained, will continue to conform to the new IMC standards.

c. All of the data available to the Agency (including the detailed data in the report referred to by the respondent) show that, for a properly-maintained truck, noise levels increase only very slowly with mileage (less than one-half decibel on average for 100,000 miles). The assertion that truck noise levels are not related to maintenance is supported neither by logic nor by the data. For example, a maintenance action such as replacing a defective muffler will most certainly have an effect on the truck noise level. In the light of the foregoing discussion, as well as the many other factors discussed elsewhere in this preamble, the Agency believes that the reduced IMC levels, as specified here, are appropriate.

5. One respondent commented that the proposed IMC noise limits are too lax, and should be lowered (i.e., made more stringent) by 2 dB. At that level, expected compliance would be about 89–91 percent, justifying reactivation of DOT enforcement activities.

The Agency concedes that more stringent IMC noise limits would provide additional health and welfare benefits, but does not agree that it would be practical to reduce those limits by 2 decibels. Such action would require many truck operators/owners to reduce the noise levels of their vehicles to "below-new" levels, and would allow little or no margin for the eventual degradation that may occur after many years of service for even a well-maintained truck. The Agency believes that the economic impact on a large number of small entity truck users and owners would be unacceptable.

### III. Conclusion

The Agency has concluded that the deferral of the MHT 80 dB noise emission standard is in the public interest and should result in cost savings to both truck manufacturers and the public. EPA has further concluded that such deferral should be accompanied by actions to minimize any potential loss of

[4] Wyle Laboratories report quoted in Docket OPMO–0184, Item Number 42.

health and welfare benefits to the public.

Accordingly, EPA defers the effective date of the MHT 80 dB noise emission standard from January 1, 1986 to January 1, 1988 and concurrently lowers by 3 decibels the IMC noise limits for 1986 and later model year vehicles. The Administrator believes that this latter action should mitigate the potential near-term delay of health and welfare benefits arising from the deferral of the MHT 80 dB noise standard. Further, and more importantly, the revised IMC standards should provide long-term health and welfare benefits that far outweigh their near-term utility by requiring continuance of proper maintenance to ensure vehicle noise control integrity.

### IV. Administrative Designation

Under Executive Order 12291, EPA must judge whether a regulation is "major" and therefore subject to the requirement of a Regulatory Impact Analysis. These two concurrent actions are not judged "major" because they do not impose significant new costs above those attributable to the existing medium and heavy truck regulation. Additionally, they are not judged major because:

1. They will not have an annual adverse affect on the economy of $100 million or more;

2. They will not cause a major increase in costs or prices to consumers, individual industries, Federal, State or local government agencies or geographic regions; and

3. They will not cause significant adverse effects on competition, employment, investment, productivity, innovation, or in the ability of United States enterprises to compete with foreign enterprises in domestic or export markets.

For these same reasons, under the provisions of the Regulatory Flexibility Act, 5 U.S.C.. 601 *et seq.*, I hereby certify that these two actions will not have a significant economic impact on a substantial number of small entities.

### V. Statutory Authority

These regulatory actions have been prepared under the authority of sections 6(e)(3) and 18(a)(12) of the Noise Control Act, 42 U.S.C. 4917 *et seq.*

### List of Subjects

*40 CFR Part 202*

Motor carrier, Noise control.

*40 CFR Part 205*

Labeling, Motor vehicles, Noise control, Reporting and recordkeeping requirements.

Dated: December 22, 1985.

**Lee M. Thomas,**

*Administrator.*

## I. PART 202—MOTOR CARRIERS ENGAGED IN INTERSTATE COMMERCE

## PART 205—TRANSPORTATION EQUIPMENT NOISE EMISSION CONTROLS

For reasons set forth in the preamble, the noise emission rules for interstate motor carrier operations at 40 CFR Part 202, and for newly manufactured Medium and Heavy Trucks at 40 CFR Part 205, are amended as follows:

1. The authority citation for Parts 202 and 205 continues to read as follows:

**Authority:** 42 U.S.C. 4905.

2. Section 202.11 is revised to read as follows:

**§ 202.11 Effective Date.**

The provisions of Subpart B shall become effective October 15, 1975, except that the provisions of § 202.20(b) and § 202.21(b) of Subpart B shall apply to motor vehicles manufactured during or after the 1986 model year.

3. Section 202.12 is amended by adding paragraphs (f) and (g) as follows:

**§ 202.12 Applicability.**

* * * * *

(f) The provisions of § 202.20(a) and § 202.21(a) of Subpart B apply only to applicable motor vehicles manufactured prior to the 1986 model year.

(g) The provisions of § 202.20(b) and § 202.21(b) apply to all applicable motor vehicles manufactured during or after the 1986 model year.

4. Section 202.20 is amended by redesignating the introductory paragraph as paragraph (a) and by adding a new paragraph (b) to read as follows:

**§ 202.20 Standards for Highway Operations.**

* * * * *

(b) No motor carrier subject to these regulations shall operate any motor vehicle of a type to which this regulation is applicable which at any time or under any condition of highway grade, load, acceleration or deceleration generates a sound level in excess of 83 dB(A) measured on an open site with fast meter response at 50 feet from the centerline of lane of travel on highways with speed limits of 35 MPH or less; or 87 dB(A) measured on an open site with fast meter response at 50 feet from the centerline of lane of travel on highways with speed limits of more than 35 MPH.

5. Section 202.21 is amended by redesignating the introductory paragraph as paragraph (a) and by adding a new paragraph (b) to read as follows:

**§ 202.21 Standard for Operation under Stationary Test.**

* * * * *

(b) No motor carrier subject to these regulations shall operate any motor vehicle of a type to which this regulation is applicable which generates a sound level in excess of 85 dB(A) measured on an open site with fast meter response at 50 feet from the longitudinal centerline of the vehicle, when its engine is accelerated from idle with wide open throttle to governed speed with the vehicle stationary, transmission in neutral, and clutch engaged. This paragraph shall not apply to any vehicle which is not equipped with an engine speed governor.

6. Section 205.52 is amended by revising paragraph (a) to read as follows:

**§ 205.52 Vehicle Noise Emission Standards.**

(a) Low Speed Noise Emission Standard.

Vehicles which are manufactured after the following effective dates shall be designed, built and equipped so that they will not produce sound emissions in excess of the levels indicated.

| Effective date | Level |
|---|---|
| (i) January 1, 1979 | 83 dBA. |
| (ii) January 1, 1988 | 80 dBA. |

* * * * *

[FR Doc. 86-346 Filed 1-7-86; 8:45 am]

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Part V

# Environmental Protection Agency

40 CFR Part 60

Standards of Performance for New Stationary Sources Industrial Surface Coating; Plastic Parts for Business Machines; Proposed Rule

Listing of Surface Coating of Plastic Parts for Business Machines as a Source Category for New Source Performance Standard Development; Notice

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

**[AD-FRL-2889-6(a)]**

## Standards of Performance for New Stationary Sources Industrial Surface Coating; Plastic Parts for Business Machines

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The proposed standards would limit emissions of volatile organic compounds (VOC's) from new, modified, and reconstructed facilities that surface coat plastic parts for business machines. The proposed standards implement section 111 of the Clean Air Act and are based on the Administrator's determinations that emissions from facilities that coat plastic business machine parts cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. The intent is to require new, modified, and reconstructed facilities to control emissions to the level achievable by the best demonstrated system of continuous emission reduction, considering costs, nonair quality health, and environmental and energy impacts.

**DATES:** *Comments.* Comments must be received on or before March 18, 1986.

### Public Hearing

If anyone contacts EPA requesting to speak at a public hearing by January 24, 1986, a public hearing will be held on February 19, 1986 beginning at 10:00 a.m. Persons interested in attending the hearing should call Ms. Shelby Journigan at (919) 541-5578 to verify that a hearing will be held.

### Request to Speak at Hearing

Persons wishing to present oral testimony must contact EPA by January 24, 1986.

### Incorporation by Reference

The incorporation by reference of certain publications in these standards will be approved by the Director of the **Federal Register** as of the date of publication of the final rule.

**ADDRESSES:** *Comments.* Comments should be submitted (in duplicate if possible) to: Central Docket Section (LE-131), Attention Docket Number A-83-50, U.S. EPA, 401 M Street SW., Washington, DC 20460.

### Public Hearing

If a public hearing is held, it will be at EPA's Office of Administration Auditorium, Research Triangle Park, North Carolina. Persons interested in attending the hearing or wishing to present oral testimony should notify Ms. Shelby Journigan, Standards Development Branch (MD-13), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5578.

### Background Information Document

The background information document (BID) for the proposed 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 "Surface Coating of Plastic Parts for Business Machines—Background Information for Proposed Standards," EPA-450/3-85-019a.[1]

### Docket

Docket No. A-83-50, containing supporting information used in developing the proposed standards, is available for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section, West Tower Lobby, Gallery 1, 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. C. Douglas Bell, Standards Development Branch, Emission Standards and Engineering Division (MD-13), U.S. EPA, research Triangle Park, North Carolina 27711, telephone number (919) 541-5624; for technical questions—Mr. James C. Berry, Chemicals and Petroleum Branch, Emission Standards and Engineering Division (MD-13), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5605.

**SUPPLEMENTARY INFORMATION:**

### I. Introduction

#### *A. New Source Performance Standards—General*

New source performance standards (NSPS or "standards") implement section 111 of the Clean Air Act. The NSPS are issued for categories of sources which cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. They apply to new stationary sources of emissions, i.e., stationary sources whose construction, reconstruction, or modification begins after a standard for them is proposed.

An NSPS requires these sources to control emissions to the level achievable by "best demonstrated technology," or "BDT," which is defined in Item B.3 below.

#### *B. NSPS Decision Scheme*

An NSPS is the product of a series of decisions related to certain key elements for the source category being considered for regulation. The elements identified in this "decision scheme" are generally the following:

1. *Source category to be regulated*—usually an entire industry, but can be a process or group of processes within an industry.

2. *Pollutant(s) to be regulated*—the particular substance(s) emitted by the source that the standard will control.

3. *Best demonstrated technology*—the technology on which the Agency will base the standards, i.e.,

> *** application of the best technological system of continous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. [section 111(a)(1)].

For convenience, this will be referred to as "best demonstrated technology" or "BDT."

4. *Affected facility*—the pieces or groups of equipment that comprise the sources to which the standards will apply.

5. *Emission points to be regulated*—within the affected facility, the specific physical location emitting pollutants (e.g., vents, stacks, or equipment leaks).

6. *Format for the standards*—the form in which the standards are expressed, e.g., as a percent reduction in emissions, as pollutant concentrations, or as equipment standards.

7. *Actual standards*—based on what BDT can achieve, the maximum permissible emissions.

> **Note.**—In general, standards do not require that a specific technology be used to achieve them. The source owner/operator may select the method for achieving the pollution control required.

8. *Other possible considerations*—in addition, NSPS often include: modification/reconstruction considerations, monitoring requirements, performance test methods, and reporting and recordkeeping requirements.

#### *C. Overview of This Preamble*

This preamble will:

[1] The document will be available from the EPA RTP Library after the standard is proposed.

1. Summarize the important features of this NSPS by discussing the conclusions reached with respect to each of the elements in the decision scheme.
2. Describe the environmental, energy, and economic impacts of this NSPS.
3. Present a rationale for each of the decisions in the decision scheme.
4. Discuss why a regulatory flexibility analysis is not needed.
5. Discuss administrative requirements relevant to this action.

## II. Summary of the NSPS

### *A. Source Category To Be Regulated*

The proposed standards limit emissions of VOC's from new, modified, and reconstructed facilities that perform exterior coating of plastic parts for business machines. Plastic parts are components formed of synthetic polymers. Examples of business machines using these parts include typewriters, computers, display terminals, printers, photocopiers, and telephones.

### *B. Pollutants To Be Regulated*

The pollutants to be regulated are VOC's.

### *C. Best Demonstrated Technology*

1. Electromagnetic/Radio Frequency Interference Shielding

No BDT is proposed for electromagnetic/radio frequency interference (EMI/RFI) shielding.

2. Exterior Coating

Table 1 summarizes BDT and the proposed standards for exterior surface coating. The BDT for exterior coating is a combination of coatings and application technologies. The BDT for prime and color coating is the use of organic-solvent-based coatings containing approximately 60 percent, by volume, solids as applied and sprayed at a transfer efficiency (TE) of 40 percent.

**Note.**—Hereinafter, the solids content of coatings will be stated by volume as applied unless otherwise stated.

The BDT for fog coating, a special type of color coating, is the application of waterborne coatings at a TE of 25 percent. The BDT for texture and touch-up coating is the application of organic-solvent-based coatings containing approximately 60 percent solids at a TE of 25 percent. Each of the proposed exterior coating standards can also be met with waterborne coatings applied at a TE of 25 percent.

As noted in Table 1, a TE of 25 percent can be achieved with air atomized spray equipment, and a TE of 40 percent can be achieved with either air-assisted airless or electrostatic spray equipment.

### *D. Affected Facility.*

The proposed affected facility is the spray booth. The spray booth means the structure housing the spray application equipment and ancillary equipment associated with the enclosure. More than one standard may apply to an affected facility.

TABLE 1. SUMMARY OF PROPOSED STANDARDS

| Coating process | Level of standard, kg VOC/l solids applied | Best demonstrated technology [a] | | |
|---|---|---|---|---|
| | | Coating [b] | Spray technique | Transfer efficiency, percent |
| Exterior: | | | | |
| Prime | 1.5 | SB containing 60 percent, by volume, solids | Air-assisted airless or electrostatic | 40 |
| Color | 1.5 | SB containing 60 percent, by volume, solids | Air-assisted airless or electrostatic | 40 |
| Texture | 2.3 | SB containing 60 percent, by volume, solids | Air atomized | 25 |
| Fog | 1.5 | WB | Air atomized | 25 |
| Touch-up | 2.3 | SB containing 60 percent, by volume, solids | Air atomized | 25 |

[a] Other technologies can be used to meet the proposed standards.
[b] SB = Organic-solvent-based; WB = waterborne.

### *E. Emission Points*

The VOC emission sources in the coating of plastic parts for business machines are: (1) The spray booths (80 percent of VOC emissions), (2) the flashoff areas (10 percent), and (3) the curing ovens (10 percent).

### *F. Format for the Standards*

The format for the proposed standards is the mass of VOC's per unit volume of coating solids applied expressed as kilograms of VOC per liter (kg VOC/l) of coating solids applied.

### *G. Actual Standards*

1. EMI/RFI Shielding

No standard is proposed for EMI/RFI shielding.

2. Exterior Coating

The proposed standards for exterior coating would limit VOC emissions to no more than 1.5 kg VOC/l of coating solids applied for prime and color coats and to no more than 2.3 kg VOC/l of coating solids applied for texture and touch-up coats.

### *H. Modification/Reconstruction Considerations*

Existing facilities can become subject to the NSPS when they are modified or reconstructed as defined in 40 CFR 60.14 and 60.15, respectively. A modification is defined as certain physical or operational changes to an existing facility that result in an increased emission rate of any pollutant to which the standard applies (40 CFR 60.14). Upon modification, an existing facility becomes an affected facility and, therefore, subject to the standard. Possible modifications that might occur include: (1) Adding application equipment (i.e., enlarging a facility's capacity by adding new spray guns in order to coat larger parts or to increase production) and (2) switching from coating of metal parts to coating of plastic parts. A facility built after proposal of this NSPS that switches from coating metal parts to coating of plastic parts would be covered under this NSPS as a new source.

A reconstruction is defined in 40 CFR 60.15 as any replacement of components of an existing facility to the extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost of a comparable new facility, and it is technologically and economically feasible to meet the applicable standards. An existing facility, upon reconstruction, becomes an affected facility, irrespective of any changes in emission rate. A possible reconstruction that might occur is the replacement of coating application equipment.

### *I. Performance Test and Compliance Methods*

Compliance would be determined by calculating the emissions from coating VOC content data, dilution data,

monthly coating consumption data, and TE. The VOC emissions (the average weighted mass [kg] of VOC's per unit volume [l] of coating solids applied) would be calculated each month. Coating VOC content would be determined by analysis of each coating, as received, using EPA Reference Method 24, from data that have been determined by the coating manufacturer using EPA Reference Method 24, or by other methods approved by the Administrator. The TE would be determined from a table provided in the regulation. A TE of 25 percent is assigned to air atomized spray equipment, and a TE of 40 percent is assigned to air-assisted airless and electrostatic spray equipment. The proposed standards allow coaters the option of demonstrating TE's higher than the assigned values.

*J. Reporting and Recordkeeping Requirements*

Following an initial performance report, each owner or operator would be required to submit a semiannual report stating that each affected facility is in compliance. In addition, each owner or operator of an affected facility which is not in compliance with the applicable emission limits specified in § 60.722 must submit quarterly reports for all months of noncompliance. The quarterly reports of noncompliance would contain the volume-weighted average mass of VOC's per unit volume of coating solids applied for each affected facility.

Each owner or operator would be required to keep records of coating VOC content, coating consumption, coating dilution, and calculations of the kg VOC's emitted per l of coating solids applied from each affected facility in each nominal 1-month period. These records would be maintained at the source for a period of at least 2 years as specified in 40 CFR 60.7(d).

## III. Impacts of This NSPS

Environmental, energy, and economic impacts of standards of performance are normally expressed as incremental differences between facilities complying with the proposed standards and those facilities if no NSPS were promulgated. Currently, there are only one State regulation and two local regulations that specifically limit VOC emissions from the surface coating of plastic parts. Because there are few regulations, the baseline is based on coating data provided by industry. The environmental, energy, and economic impacts were computed relative to this baseline.

*A. Air*

In a typical plant, the proposed standards would reduce overall VOC emissions by 51 percent below baseline. The emission reductions from specific operations are a 74-percent emission reduction from prime and color coating operations and a 60-percent emission reduction from texture coating operations. Total VOC emission reductions (megagrams of VOC's per year [Mg VOC/yr]) for model plants are 5.5 Mg VOC/yr for a small plant, 44 Mg VOC/yr for a medium plant, and 109 Mg VOC/yr for a large plant.

The fifth-year nationwide emission reduction achieved by the recommended standards is approximately 2,200 Mg/yr, or 51 percent of the total emissions from affected facilities, which corresponds to an emission reduction of 1,200 Mg/yr from prime and color coating operations and 980 Mg/yr from texture coating operations. Small additional reductions will be achieved from fog and touch-up coating processes.

In the fifth year after the standards become applicable (1990), it is estimated that new, modified, and reconstructed affected facilities at 216 plants will be covered by the NSPS, including 191 small plants, 24 medium plants, and 1 large plant. This is equivalent to 8.2 million square meters ($m^2$) of plastic being coated at affected facilities. An additional 15.4 million $m^2$ would be coated at existing facilities, for a total industrywide production rate of 23.6 million $m^2$. The above numbers are approximations. The number of affected facilities may vary depending upon the number of existing plants incorporating BDT for economic reasons and the number of existing metal coaters switching to the coating of plastic. Thus, the impacts of the proposed standards on emissions, costs, energy, and other environmental impacts are also approximations because they depend on the number of affected facilities.

*B. Water*

Water pollution from waterwash spray booths would be reduced under this NSPS due to improved TE for prime and color coating.

*C. Solid Waste*

This NSPS will reduce the volume of solid wastes generated nationwide. Improving TE for prime and color coating from 25 percent to 40 percent will reduce solid waste resulting from overspray. Solid waste generated by a typical plant would be reduced approximately 25 percent below baseline discharge levels.

*D. Noise*

This NSPS will have no impact on noise.

*E. Radiation*

This NSPS will have no impact on radiation.

*F. Energy*

Annualized energy costs will not be affected by the proposed standards.

*G. Control Costs*

Annualized control costs include the raw material costs (i.e., low-VOC-content coatings) and the capital recovery value of any additional application equipment. During the fifth year of applicability of the proposed standards, the nationwide annualized costs at plants covered by the standards would amount to $120 million, compared with the annualized costs of $150 million at new plants with emissions at the regulatory baseline. The cumulative 5-year capital costs for plants covered by the proposed standards would be $23 million compared to $20 million at the regulatory baseline.

*H. Economic Effects*

The proposed standards would result in a 24-percent and a 13-percent reduction in the overall price for the surface coating of plastic parts for business machines for small plants and large plants, respectively. The availability of the lower cost technologies on which the proposed standards are based could increase the amount of plastic parts coated for business machines to 24.6 million $m^2$ in 1990.

## IV. Rationale for Proposed Standards

*A. Selection of Source Category*

As discussed elsewhere in today's **Federal Register**, the surface coating of plastic parts for business machines has been listed for NSPS development. The rationale for the decision to list this source category is discussed below.

Industrial surface coating operations account for over 2 million Mg of VOC emissions each year. Approximately 4,600 Mg of VOC's were emitted from the surface coating of plastic parts for business machines in 1984. The projected annual growth rate for the surface coating of plastic parts for business machines is 17 percent, which is high compared to that for other coating industries.

The VOC's emitted from surface coating operations participate in atmospheric photochemical reactions to produce ozone and other photochemical

oxidants. Photochemical oxidants result in adverse impacts on health and welfare, including impaired respiratory function, eye irritation, necrosis of plant tissue, and deterioration of some synthetic materials. Further information on these effects can be found in the U.S. EPA document entitled "Air Quality Criteria for Ozone and Other Photochemical Oxidants" (EPA–600/8–78–004).

*B. Pollutant To Be Regulated*

The VOC's are emitted to the atmosphere when organic solvents evaporate from the coatings used to coat plastic parts for business machines and as a by-product of the curing reaction of the coatings. The VOC's are the primary pollutants from this process and are the only pollutants that would be regulated by this standard because of their overall volume and severity as an air pollution problem and because technology is currently available to reduce these emissions. This VOC emission reduction can occur both through the use of low-VOC-content coatings and through the improvement of TE.

Spray booths are also potential sources of pollutants other than VOC's, such as particulate matter. Particulate overspray from exterior coatings would consist of resins and pigments that are components of the coatings; particulate overspray from EMI/RFI shielding coatings would consist of resins and conductive fillers such as nickel and copper. Zinc-arc spraying operations would emit zinc particulates and zinc oxide fumes. Particulate emissions would be negligible because of the high removal efficiency (greater than 95 percent) of the spray booth filtration systems; therefore, these emissions are not regulated by this NSPS.

*C. Selection of Best Demonstrated Technology*

Section 111 of the Clean Air Act requires that standards of performance reflect the BDT, which is the technology that yields the greatest emission reduction without imposing unreasonable impacts. See *Essex Chemical Corp. v. Ruckelshaus, 486 F.2d 427, 433 (D.C. Cir. 1973).*

1. Applicable Control Technologies

Control techniques commonly used to reduce VOC emissions from surface coating processes include the substitution of non-VOC-emitting processes for VOC-emitting processes, the use of low-VOC-content coatings, the use of more efficient conating application techniques, and the use of add-on controls. With the exception of add-on controls, the control techniques listed above are all used in this industry.

a. *Non-VOC-emitting processes.* Non-VOC-emitting processes are being used to provide EMI/RFI shielding to plastic parts for business machines. Examples of non-VOC-emitting EMI/RFI shielding processes include zinc-arc spray, zinc-flame spray, electroless plating, vacuum metallizing, sputtering, use of conductive plastics, and use of metal inserts. These EMI/RFI shielding methods do not, in themselves, emit VOC's; however, some secondary processing steps used in conjunction with these techniques may emit VOC's.

Zinc-arc spraying is a two-step process in which the plastic surface, usually the interior of a housing, is first roughened by sanding or grit-blasting and then spray-coated with zinc that has been melted by an electric arc. Zinc-flame spraying is similar to zinc-arc spraying except that the zinc is melted by a high temperature flame. Zinc-arc spraying is the most frequently used of the non-VOC-emitting shielding techniques. Zinc-arc spray emits fumes, noise, and light. A face shield, breathing air supply or respirator, and hearing protection are required for the operator. Although the conventional zinc-arc spray process does not emit VOC's, VOC-emitting primers that can be used instead of grit-blasting to improve zinc adhesion have recently been developed. The use of these coatings would result in VOC emissions from the surface preparation step for zinc-arc spray.

Electroless plating is a dip process in which a film of metal is deposited from aqueous solution, usually onto all exposed surfaces of the part. The plastic parts are prepared for electroless plating by oxidizing their surfaces with aqueous chromic and sulfuric acids or with gaseous sulfur trioxide. Following the oxidizing step, a metal film (usually copper, nickel, or chrome) is plated onto the plastic part.

Selective electroless plating processes that permit the metal film to be deposited onto specific areas of the part without masking have recently been developed. To perform selective plating, an organic-solvent-based or waterborne coating is usually applied to the areas of the part to be plated. This surface preparation step emits some VOC's. The metal film is deposited from the plating solution only onto the coated areas of the part.

Vacuum-metallizing and sputtering are two similar techniques in which a thin film of metal is deposited onto the plastic part from the vapor phase. Although no VOC emissions occur during the actual metallizing process, organic-solvent-based prime coats and top coats are often sprayed onto parts to promote adhesion and prevent degradation of the metal film. The VOC emission reduction potential of these techniques depends on the extent to which VOC-emitting prime coats and top coats are used and the organic solvent content of the coatings used.

Conductive plastics, which are mixtures of resins and conductive fillers, are not widely used for EMI/RFI shielding at the present time. These materials are being studied extensively for business machine applications.

Metal inserts used to provide EMI/RFI shielding to electronic components within plastic housings can be in the form of a metal box within a plastic housing, metal foil glued onto the plastic part or laminated between layers of compression molded plastic, or metal screens or fibers placed within a plastic housing.

b. *Low-VOC-content coatings.* Low-VOC-content coatings are being used both for EMI/RFI shielding and exterior coating of plastic parts for business machines. Coatings for EMI/RFI shielding are typically applied to the interior surface of plastic housings. Examples of low-VOC-content coatings are powder coatings, waterborne coatings, and organic-solvent-based coatings with higher solids contents than conventional organic-solvent-based coatings.

Powder coatings contain no organic solvent and emit little or no VOC's. Powder coatings are not used on plastic parts for business machines at the present time because they require curing temperatures that exceed the temperature limitations of the plastic parts. Powder coatings that can be cured with ultraviolet (UV) or infrared (IR) radiation are being developed and, once proven, may be applicable to this industry.

Of the demonstrated low-VOC-content coatings, waterborne coatings produce the least VOC emissions. Waterborne coatings use water as their primary carrier but do contain some VOC's. Waterborne nickel-filled acrylics and urethanes are available for EMI/RFI shielding. These coatings typically contain between 0.31 and 1.0 kg VOC/l of coatings solids, as applied. Single-component waterborne acrylics and two-component acid-catalyzed waterborne coatings are being used for exterior coating. These exterior coatings contain from 0.23 to 0.41 kg VOC/l of coating solids, as applied.

Organic-solvent-based coatings containing more solids than conventional organic-solvent-based

coatings are being used for both EMI/RFI shielding and exterior coating processes. The volume solids content of EMI/RFI shielding coatings is substantially lower and the VOC content is higher than in exterior coatings. The density of the metal particles in EMI/RFI shielding coatings limits their volume solids content. Conventional organic-solvent-based EMI/RFI shielding coatings typically contain approximately 15 percent solids, which corresponds to a VOC content of approximately 5.00 kg/l of coating solids, as applied. Organic-solvent-based single-component nickel-filled acrylics and two-component catalyzed nickel-filled urethanes that contain up to 25 percent solids have been used for EMI/RFI shielding. The higher solids content of these coatings corresponds to approximately 2.64 kg VOC/l of coatings solids, as applied. A two-component catalyzed nickel-filled urethane that contains 35 percent solids has recently been developed. The higher solids content of this coating corresponds to a VOC content of approximately 1.63 kg/l of coating solids, as applied.

Conventional organic-solvent-based exterior coatings contain an average of 32 percent solids, which corresponds to a VOC content of about 1.88 kg/l of coating solids, as applied. Organic-solvent-based two-component catalyzed urethane exterior coatings containing an average of 50 percent solids, or approximately 0.88 kg VOC/l of coating solids, as applied, are being used. The catalyst and coating can be mixed before spraying, and the catalyzed coating has a pot life of up to 4 hours. Single-component organic-solvent-based acrylics and urethanes in this higher solids range have also been developed but are still being tested.

Organic-solvent-based two-component catalyzed urethanes containing over 60 percent solids have been developed, and one of these coatings has been used in production. These coatings contain an average of 0.58 kg VOC/l of coating solids and emit less VOC's than any other organic-solvent-based coatings currently in use. The pot life of the coating that has been used in production is less than 1 hour after the coating and catalyst are mixed; consequently, plural-component metering systems that mix the coating and catalyst at the spray gun are usually necessary to apply this coating. The need to purchase plural-component metering equipment has slowed the acceptance of this coating.

An organic-solvent-based two-component catalyzed acrylic coating that contains approximately 60 percent solids (0.58 kg VOC/l of coating solids) has recently been developed. This coating has a pot life of 8 to 16 hours and does not require the use of plural-component metering equipment. This coating is still being tested by business machine manufacturers and has not been used in production.

c. *Improving transfer efficiency.* Transfer efficiency is the ratio of the coating solids that adhere to a part to the total amount of coating solids used. Improving TE reduces total coating consumption, resulting in decreased VOC emissions. The most commonly used coating application technique in this industry is air atomized spray, which provides an average TE of 25 percent for exterior coating and an average TE of 50 percent for EMI/RFI shielding. Metal-filled EMI/RFI shielding coatings are typically sprayed at a lower atomization pressure and with a narrower spray pattern than are exterior coatings, resulting in a higher TE.

Two types of spray application techniques that have been used to improve TE are air-assisted airless spray and electrostatic air spray. Air-assisted airless spray is a variation of airless spray, a spray technique used in other industries. In airless spray coating, the coating is atomized without air by forcing the liquid coating through specially designed nozzles at pressures of 7 to 14 Megapascals. Air-assisted airless spray atomizes the coating by the same mechanism as airless spray but at lower fluid pressures. A small amount of air is used to further atomize the coating and to help shape the spray pattern, reducing the amount of overspray below that achieved with airless atomization alone.

Air-assisted airless spray can achieve an average TE of 40 percent for exterior coating and has been used to apply prime and color coats, but not texture coats, to plastic parts for business machines. A touch-up coating step using air atomized spray equipment (25 percent TE) is sometimes necessary to apply color to recessed and louvered areas missed by air-assisted airless spray. Silver-filled organic-solvent-based EMI/RFI shielding coatings have been applied to plastic parts in this industry using air-assisted airless spray guns.

For electrostatic air spray, usually the coating is charged and the parts being coated are grounded to create an electric potential between the coating and the parts. The atomized coating is attracted to the part by electrostatic force. Because plastic is an insulator, it is necessary to provide a conductive surface that can bleed off the electrical charge to maintain the ground potential of the part as the charged coating particles accumulate on the surface. Conductivity of the plastic surface can be achieved by deposition of a thin metal film onto the surface of the plastic part or by application of a conductive sensitizer onto the part. These are the only two electrostatic air spray methods that have been used successfully in this industry. Other methods that have been used in other industries to coat plastic parts electrostatically include the use of conductive (waterborne) coatings and the placement of a grounded metal image behind the part being coated.

Electrostatic air spray has been demonstrated for application of prime and color coats to plastic parts for business machines and can achieve a TE of at least 40 percent for these two processes. Electrostatic air spray has also been used to apply texture coats in this industry. However, this technique functions poorly with the large size particles generated for the texture coat and does not offer any substantial improvement in TE over air atomized spray for texture coating. A touch-up coating step using air atomized spray is sometimes necessary to apply color and texture to recessed and louvered areas missed by electrostatic spray. Electrostatic air spray has not been used to apply EMI/RFI shielding coatings.

d. *Add-on controls.* Add-on controls used to control VOC emissions in other surface coating industries include thermal and catalytic incinerators, carbon adsorbers, and condensers. These control devices are most often used for processes in which VOC's can be efficiently captured and delivered to the control device at high concentrations.

In this industry, approximately 80 percent of the emissions occur in the spray booths, 10 percent occur in the flashoff areas, and 10 percent occcur in the ovens. Of these three emission points, only the emissions in the spray booths and ovens are captured efficiently. The flashoff areas are usually very large and not enclosed, and indoor VOC concentrations resulting from flashoff are typically reduced by dilution ventilation.

The spray booth exhaust stream is a high volume stream with low VOC concentrations. Large amounts of supplemental fuel would be required to control spray booth emissions using either thermal or catalytic incinerators, resulting in a large increase in energy consumption compared to other control techniques. The average cost effectiveness of controlling VOC emissions from spray booths by thermal

incineration in a typcial medium-size plant is at least $9,700 per Mg of VOC's controlled, which is considered unreasonable. The high humidity of the exhaust stream from waterwash spray booths would necessitate pretreatment to lower the relative humidity before a carbon adsorber or a condenser could be used. Large carbon beds and condensers would also be necessary to handle the large flow of air exhausted from spray booths. The cost of carbon adsorbers or condensers would be similar to the cost of thermal incineration and would, therefore, be an unreasonable cost.

Thermal and catalytic incineration, carbon adsorption, or condensation might be used to control VOC emissions from ovens and flashoff areas. Since coatings used in this industry are cured at temperatures of about 60 °C (140 °F), a large amount of supplemental fuel would be required to control oven emissions by incineration. The average cost effectiveness of controlling VOC emissions from ovens by thermal incineration in a typical medium-size plant is at least $2,800 per Mg of VOC's controlled, which is considered unreasonable. The average cost effectiveness of controlling VOC emissions from flashoff areas by thermal incineration in a typical medium-size plant would be even higher than the $2,800 per Mg of VOC's calculated for the oven because additional investments would be required to build enclosures around the flashoff area. Therefore, the cost of capturing and controlling VOC emissions from the flashoff areas is also considered unreasonable.

Add-on controls are not used in this industry, and no plants are expected to be built that use add-on control techniques. Nonetheless, the proposed standards allow the use of add-on controls to reduce VOC emissions.

2. Regulatory Alternatives and Control Options Considered

To simplify examination of the regulatory alternatives, which consider EMI/RFI shielding and exterior coating process together, the cost, environmental, and energy impacts and cost effectiveness of control options for EMI/RFI shielding and exterior coating are presented separately. The economic impacts are presented in terms of the regulatory alternatives. The VOC emissions, coats, and cost effectiveness for each control option are summarized for Model Plant A (small plant) in Tables 2 through 5. Similar cost trends were observed for Model Plans B (medium plant) and C (large plant). The baseline for EMI/RFI shielding and exterior coating is summarized in Table 6.

Some control options are inferior to others in the sense that they provide less emission reduction at a higher cost. The impacts of inferior control options are not discussed in the text of this preamble.

a. *EMI/FRI shielding control options.* The EMI/RFI shielding control options are listed below in order of the least stringent to the most stringent control option:

(1) Organic-solvent-based coatings containing 15 percent solids applied at 50 percent TE (baseline);

(2) Organic-solvent-based coatings containing 25 percent solids applied at 50 percent TE;

(3) Waterborne coatings applied at 50 percent TE; and

(4) Non-VOC-emitting processes (zinc-arc spray).

Emission and cost data for the EMI/RFI shielding control options are presented in Table 2. Option 2 is inferior to Option 3 and, therefore, is not discussed further as a candidate for BDT. The costs and emission reductions of Options 1, 3, and 4 are compared in Table 3.

TABLE 2. EMISSION AND COST DATA FOR EMI/RFI SHIELDING CONTROL OPTIONS FOR MODEL PLANT A [a]

| Control option | Coating material | Percent solids, by volume, at the gun | Transfer efficiency, percent | Emissions, Mg/yr | Total annualized cost, $/yr [b] |
|---|---|---|---|---|---|
| 1 [c] | SB coating No. 1 [d] | 15 | 50 | 2.48 | 433,637 |
| 2 | SB coating No. 2 | 25 | 50 | 1.31 | 450,264 |
| 3 | WB coating (72/26) [e] | 33 | 50 | 0.27 | 441,433 |
| 4 | Zinc-arc spray | 100 | 53 | 0 | 613,651 |

[a] Model Plant A (the small model plant) applies 1,730 / of coating solids per year to plastic parts, 250 / of which are for EMI/RFI shielding.
[b] Total annualized cost figure includes exterior coating cost. Exterior coating costs remain fixed at the baseline level while EMI/RFI shielding costs are varied.
[c] Control Option 1 is the baseline.
[d] SB = Organic-solvent-based.
[e] WB = Waterborne. Numbers in parentheses give the ratio of water to organic solvent (VOC's) in the coating.

TABLE 3. COST EFFECTIVENESS OF EMI/RFI SHIELDING CONTROL OPTIONS FOR MODEL PLANT A

| Control option | Emission reduction, Mg/yr | Cost with respect to baseline, $/yr | Average cost effectiveness $/Mg [a] | Incremental cost effectiveness, $/Mg |
|---|---|---|---|---|
| 1 | 0 | 0 | [b] N/A | N/A |
| 2 | 1.17 | 16,627 | [c] N/A | [c] N/A |
| 3 | 2.21 | 7,796 | 3,500 | [d] 3,500 |
| 4 | 2.48 | 180,013 | 72,000 | [e] 640,000 |

[a] Cost effectiveness with respect to baseline (Option 1).
[b] N/A = Not applicable.
[c] Not applicable because Option 2 is inferior to Option 3 and was not considered for BDT.
[d] Incremental cost efffectiveness compared to Option 1.
[e] Incremental cost efffectiveness compared to Option 3.

TABLE 4. EMISSION AND COST DATA FOR EXTERIOR COATING CONTROL OPTIONS FOR MODEL PLANT A [a]

| Control option | Coating material | Percent solids, by volume at the gun | Transfer efficiency, percent | Emissions, Mg/yr | Total annualized cost, $/yr [b] |
|---|---|---|---|---|---|
| 1 [c] | Baseline mix [d] | [d] BM | [e, f] 25 | 8.12 | 433,637 |
| 2 | Baseline mix [d] | [d] BM | [e] 40<br>[f] 25 | 6.60 | 402,815 |
| 3 | SB coating No. 2 [g] | 50 | [e, f] 25 | 4.82 | 428.137 |
| 4 | SB coating No. 2 | 50 | [e] 40<br>[f] 25 | 3.91 | 398,943 |
| 5 | SB coating No. 3 | 60 | [e, f] 25 | 3.28 | 359,445 |
| 6 | SB coating No. 3 | 60 | [e] 40<br>[f] 25 | 2.67 | 327,498 |
| 7 | WB (80/20) [h] | 37 | [e, f] 25 | 1.78 | 433,756 |
| 8 | WB (60/20) | 37 | [e] 40<br>[f] 25 | 1.45 | 402,916 |

[a] Model Plant A (the small model plant) applies 1,730 / of coating solids per year to plastic parts, 1,480 / of which are for exterior coating.
[b] Total annualized cost figure includes EMI/RFI shielding cost. Shielding costs remain fixed at the baseline level while exterior coating costs are varied.
[c] Control Option 1 is the baseline.
[d] "Baseline mix" (BM) referes to the mix of exterior coatings summarized in Table 6.
[e] TE for prime and color coating.
[f] TE for texture and touch-up coating.
[g] SB = Organic-solvent-based.
[h] WB = Waterborne. Number in parentheses give the ratio of water to organic solvent (VOC's) in the coating.

TABLE 5. COST EFFECTIVENESS OF EXTERIOR COATING CONTROL OPTIONS FOR MODEL PLANT A

| Control option | Emission reduction, Mg/yr | Cost with respect to baseline, $/yr | Average cost effectiveness, $/MG [a] | Incremental cost effectiveness, $/Mg [b] |
|---|---|---|---|---|
| 6 | 5.45 | −106,139 | −19,000 | [c] N/A |
| 7 | 6.34 | 118 | [d] N/A | [d] N/A |
| 8 | 6.67 | −30,721 | −4,600 | 62,000 |

[a] Cost effectiveness with respect to baseline (Option 1).
[b] Incremental cost effectiveness with respect to Option 6.
[c] N/A = Not applicable.
[d] Not applicable because Option 7 is inferior to Option 8.

TABLE 6. BASELINE COATING UTILIZATION

| Type of coating [a] | Percent solids, by volume, at the gun | Percent of total coating consumption | VOC emissions | |
|---|---|---|---|---|
| | | | kg VOC/l of solids [b] | kg/l of solids applied at 25 percent TE |
| SB EMI/RFI shielding coating [c] | 15 | 17.1 | 5.00 | 20.0 |
| SB exterior coating No. 1 [d] | 32 | 53.7 | 1.88 | 7.52 |
| SB exterior coating No. 2 [d] | 50 | 19.5 | 0.88 | 3.52 |
| WB exterior coating (80/20) [d] | 37 | 9.7 | 0.31 | 1.24 |

[a] SB = Organic-solvent-based; WB = waterborne. Numbers in parentheses give the ratio of water to organic solvent (VOC's) in the coating.
[b] Assuming as average VOC density of 0.882 kg/l.
[c] Numbers do not reflect the baseline use of zinc-arc spray EMI/RFI shielding at medium and large model plants.
[d] The baseline mix of exterior coatings consists of the three exterior coatings shown in this table.

Options 1 and 3 are based on the use of nickel-filled acrylics. Option 4, which is the most stringent option that could be selected as BDT, is the use of non-VOC-emitting EMI/RFI shielding processes. Of the non-VOC-emitting shielding processes, zinc-arc spray was evaluated as the most reasonable candidate for BDT because it is widely demonstrated on many types of plastics. A TE of 53 percent is assumed for zinc-arc spray.

b. *Exterior coating control options.* Eight control options were considered for exterior coating. Four of the control options assume that all exterior coatings are applied at a TE of 25 percent using air atomized spray equipment. The remaining four control options assume that prime and color coats (approximately one-half of the exterior coating solids applied) are applied at a TE of 40 percent, while the texture and touch-up coats are applied at a TE of 25 percent. It was assumed that either air-assisted airless or electrostatic spray equipment could be used to achieve a TE of 40 percent. The control options are listed below in order of the least stringent to the most stringent control option:

(1) Baseline mix of exterior coatings (see Table 6) applied at 25 percent TE for all exterior coating steps (baseline);

(2) Baseline mix of exterior coatings applied at 40 percent TE for prime and color coats and 25 percent TE for texture and touch-up coats;

(3) Organic-solvent-based coatings containing 50 percent solids applied at 25 percent TE for all exterior coating steps (the quantity of plastic coated with waterborne coatings remains at the baseline level);

(4) Organic-solvent-based coatings containing 50 percent solids applied at 40 percent TE for prime and color coats and 25 percent TE for texture and touch-up coats (the quantity of plastic coated with waterborne coatings remains at the baseline level);

(5) Organic-solvent-based coatings containing 60 percent solids applied at 25 percent TE for all exterior coating steps (the quantity of plastic coated with waterborne coatings remains at the baseline level);

(6) Organic-solvent-based coatings containing 60 percent solids applied at 40 percent TE for prime and color coats and 25 percent TE for texture and touch-up coats (the quantity of plastic coated with waterborne coatings remains at the baseline level);

(7) Waterborne coatings applied at 25 percent TE for all exterior coating steps; and

(8) Waterborne coatings applied at 40 percent TE for prime and color coats and 25 percent TE for texture and touch-up coats.

Emission and cost data for the exterior coating control options are presented in Table 4. Options 1 through 5 are inferior to Option 6 and, therefore, are not discussed further as candidates for BDT. Likewise, Option 7 is inferior to Option 8 and, therefore, is not discussed further as a candidate for BDT. The costs and emission reductions of Options 6 and 8 are compared in Table 5.

3. Environmental Impacts

Environmental impacts were evaluated for each control option. The impacts of inferior control options are not presented here. Nationwide impacts were estimated based on the assumption that in 1990, 191 small plants, 24 medium plants, and 1 large plant will be covered by the NSPS.

a. *EMI/RFI shielding.* Option 1 is the baseline and would result in 2,800 Mg of VOC's being emitted nationwide from EMI/RFI shielding processes at existing and new plants in 1990. Option 3, the use of waterborne EMI/RFI shielding coatings, would reduce emissions in 1990 by 890 Mg. Option 4, the use of non-VOC-emitting processes, would reduce VOC emissions in 1990 by 1,000 Mg.

Using zinc-arc spray for EMI/RFI shielding may increase zinc and zinc oxide fume emissions to the atmosphere. However, these emissions would be minimal because most of the zinc overspray is recovered for resale. A typical zinc-arc spray station operating at capacity would emit approximately 0.8 Mg/yr of zinc. In-plant noise levels would increase as a result of using zinc-arc spray.

b. *Exterior coating.* Option 1 is the baseline and would result in 9,000 Mg of VOC's being emitted nationwide from all exterior coating processes in 1990. Option 6 would reduce VOC emissions in 1990 by 2,200 Mg. Option 8 would reduce VOC emissions in 1990 by 2,700 Mg.

Improving TE for Options 6 and 8 would reduce overspray, and, consequently, solid waste and water pollution from dry filter and waterwash spray booths would be decreased.

4. Energy Impacts

The energy impacts of all control options are negligible. The exterior coatings outlined in the control options can all be cured at low temperatures, and differences in energy consumption among these control options are insignificant.

5. Economic Impacts

The economic impacts were evaluated in terms of regulatory alternatives. The economic impacts of regulatory alternatives that use inferior control options for EMI/RFI shielding or exterior coating are not discussed here. The regulatory alternatives discussed here (VIII–25/40 and XII–25/40) both use EMI/RFI shielding Option 1 (baseline). Regulatory Alternatives VIII–25/40 and XII–25/40 use exterior coating Options 6 and 8, respectively.

The economic effects of the regulatory alternatives were estimated separately

for two distinct, competitive submarkets, one represented by Model Plant A, the other by Model Plant B. This was done because the costs of production differ substantially for the two plant types. Both model plants are expected to be built for serveral reasons. Typically, the smaller plants fill a valuable niche in the surface coating market by providing flexibility in production. They can do many small jobs that a larger facility would not routinely handle. These might include coating of prototype parts or a first production run of some parts prior to beginning large-scale production. Consequently, even though the larger model plants have lower unit costs, the smaller facilities will still be built and used, even at a higher cost per square meter of plastic coated. Total effects are based on the sum of the effects for each submarket. A third model plant type, C, was not considered in the economic analysis because only one new plant is expected to be constructed over the analysis period.

Regulatory Alternatives VIII–25/40 and XII–25/40 both would reduce the operating costs of new facilities and, hence, the price of coating services. The price reductions would be 24 and 7 percent, respectively, relative to baseline for Market A (composed of Model Plant A's) and 13 and 7 percent for market B.

Under Regulatory Alternatives VIII–25/40 and XII–25/40, quantities of surface-coating services supplied in 1990 for Markets A and B combined would increase by 4 and 2 percent, respectively, relative to the baseline.

Individual firms tend to select least-cost production techniques when adding new capacity. However, there are tangible costs in converting to a new coating. These costs may involve additional equipment, operator training, and a testing program to satisfy business machine manufacturers that the coating will meet their performance specifications. There is also aversion to change and the risks associated with that change. All of these factors may affect a firm's decision to change coating formulations. This appears to be the case in plastic parts coating. Without a standard, many new facilities would not be state-of-the-art but would incorporate the current baseline mix of coatings. Alternatives VIII–25/40 and XII–25/40 would accelerate the adoption of the lower-VOC-emitting technologies, which would reduce emissions and, at the same time, reduce the costs of coating plastic parts. No changes in the quality of the final coated product are expected.

The adoption of the cost-savings technologies represented by Alternatives VIII–25/40 and XII–25/40 by new plants would put downward pressure on the price of plastic parts coating services because the sales price falls well below the level of the current prices of existing plants. In the face of falling prices, existing plants will tend to adopt the technologies represented by Regulatory Alternatives VIII–25/40 and XII–25/40 to lower production costs and to maintain profit margins. This changeover could result in a total reduction of 6,300 and 8,000 Mg of VOC annually by 1990 for Regulatory Alternatives VIII–25/40 and XII–25/40, respectively.

6. Costs and Cost Effectiveness

The costs and cost effectiveness have been estimated for each of the control options. The costs associated with inferior control options are not discussed here.

a. *EMI/RFI shielding.* Annualized costs and emission reductions of Options 3 and 4 were compared to those of Option 1, the baseline, to determine the average cost effectiveness of the more stringent options (Options 3 and 4). The total annualized cost and emission reduction for Option 4 were compared to those for Option 3 to determine the incremental cost effectiveness of Option 4. The results of these analyses for Model Plant A are presented in Table 3.

Differences in nationwide annualized costs in 1990 and nationwide emission reductions in 1990 for the three options were also determined. Option 4 would increase industry-wide annualized costs by $34 million and would achieve an additional emission reduction of 110 Mg/yr compared to Option 3. This corresponds to an incremental cost-effectiveness of $320,000 per additional Mg of emission reduction compared to Option 3.

Option 3 would increase industry-wide annualized costs by $4 million and would achieve an additional emission reduction of 890 Mg/yr compared to Option 1. This corresponds to an incremental cost effectiveness of $4,500 per additional Mg of emission reduction compared to Option 1.

b. *Exterior coating.* The annualized cost and emission reduction of Option 8 were compared to those of Option 6 for individual model plants to determine the incremental cost effectiveness of the more stringent option (Option 8). The results of this analysis for Model Plant A are presented in Table 5.

Differences in nationwide annualized costs in 1990 and emission reductions in 1990 for the two options were also determined. Option 8 would increase industry-wide annualized costs by $19 million and would achieve an additional emission reduction of 490 Mg compared to Option 6. This corresponds to an incremental cost effectiveness of $39,000 per additional Mg of emission reduction compared to Option 6.

Options 6 and 8 would reduce nationwide annualized costs and reduce VOC emissions relative to the baseline.

7. Rationale for Selecting Control Options

The rationale for selection of control is presented separately for EMI/RFI shielding and exterior coating.

a. *EMI/RFI shielding.* For each EMI/RFI shielding option considered for BDT, the cost effectiveness compared to the baseline was judged to be unreasonable. Consequently, none of the control options were selected as BDT, and, therefore, EMI/RFI shielding will not be regulated in this NSPS at the present time.

Although none of the EMI/RFI shielding options currently provide VOC emission control at a reasonable cost, small changes in the price of these options could lead to cost-effective control techniques in the future. Coating manufacturers, business machine manufacturers, and coaters are working on the development and testing of low-VOC-content EMI/RFI shielding coatings and non-VOC-emitting shielding methods. The EMI/RFI shielding options will be reevaluated during the 4-year review of the NSPS.

b. *Exterior coating.* Exterior coating Option 6, the application of organic-solvent-based coatings containing 60 percent solids at 40 percent TE for prime and color coats and 25 percent TE for texture and touch-up coats, was selected as BDT for prime, color, texture, and touch-up coating. A separate BDT was selected for fog coating.

Option 8, the application of waterborne coatings at 40 percent TE for prime and color coats and 25 percent TE for texture and touch-up coats, is the most stringent exterior coating option that could be selected as BDT. Waterborne coatings are currently in use in all exterior coating steps, and the annualized cost of this option compared to the baseline is judged to be reasonable (net annualized credit). However, the cost effectiveness of Option 8 compared to Option 6 is judged to be unreasonable (greater than $60,000 per additional Mg of emission reduction). Therefore, Option 8 was rejected as BDT.

Options 1 through 5 are all inferior to Option 6, and Option 7 is inferior to

Option 8. Therefore, Options 1 through 5 and Option 7 were rejected as BDT.

Option 6 is the third most stringent exterior coating option. Two-component catalyzed urethanes containing 60 percent solids, represented by Option 6, have been used in production at three facilities and have been tested at others. These coatings can be applied to all of the commonly used plastic substrates, as well as to aluminum and steel. The coatings containing 60 percent solids that have been used in production were recently reformulated to about 53 percent solids because of low sales volume and, therefore, are not available at the time of this proposal. The poor sales apparently resulted from the fact that plural-component metering systems were necessary to apply the coating at the higher solids content. Two other coating manufacturers have recently completed successful research and development programs on 60 percent solids coatings. One of these coatings is a two-component catalyzed acrylic coating and the other is a two-component catalyzed urethane coating. Neither of these coatings requires use of plural-component metering equipment. A third coating manufacturer is planning to increase the solids content of one of their currently available urethane coatings from 53 to 60 percent solids. Other coating manufacturers are working on the development of 60 percent solids coatings. Three of these coatings manufacturers who have experimental coatings that contain 60 percent solids have stated that these coatings will be available when this NSPS is promulgated. Therefore, a BDT based on 60 percent solids coatings is reasonable.

Air-assisted airless and electrostatic air spray equipment have been demonstrated for the application of prime and color coats to plastic business machine parts with conventional organic-solvent-based coatings containing 32 percent solids. Manufacturers of air-assisted airless spray equipment have stated that their equipment is capable of spraying coatings containing 60 percent solids. In addition, organic-solvent-based coatings containing 60 percent solids are being applied with electrostatic air spray guns in the large applicance and metal furniture industries for exterior coating. The use of air-assisted airless and electrostatic spray equipment to apply organic-solvent-based coatings containing 60 percent solids to plastic parts for business machines are, thus, reasonable extrapolations of existing technology. Therefore, BDT for prime and color coats is the application of organic-solvent-based coatings containing 60 percent solids with air-assisted airless or electrostatic spray equipment at 40 percent TE.

Air-assisted airless spray has not been demonstrated for application of the texture coat, and electrostatic spray does not offer any substantial improvement in TE over air atomized spray for this process. A touch-up coating step using air atomized spray is sometimes necessary to coat recessed and louvered areas missed by air-assisted airless and electrostatic spray. Therefore, BDT for texture and touch-up coating is the application of the organic-solvent-based coatings containing 60 percent solids with air atomized spray equipment at 25 percent TE.

Fog coating (also called "mist coating" or "uniforming") is the application of a thin (generally $\leq$0.5 mil dry film thickness) of coating solids to a part with molded-in color and texture to improve color and gloss uniformity. Fog coating is not a major source of VOC emissions compared to prime, color, texture, and touch-up coating operations, and was not considered in the preceding analyses. This process can only be accomplished by using coatings containing low levels of coating solids. Fog coating is usually performed by diluting conventional organic-solvent-based coatings by 100 percent with organic solvent prior to spraying. Therefore, the baseline for fog coating is organic-solvent-based coatings containing 16 percent solids at 25 percent TE with air atomized spray equipment. The coatings represented by Options 1 through 8 and air-assisted airless spray result in film thicknesses that may obscure molded-in texture; therefore, none of these methods for reducing emissions are technically feasible control options for fog coating operations. However, the waterborne coatings described in Options 7 and 8 can be diluted with water to 15 to 20 percent solids and applied with air atomized spray to control VOC emissions from fog coating. Cost-effectiveness values for fog coating were calculated for two identical spray booths operating at capacity. Capital costs were identical for each booth. Differences in costs of materials for waterborne and organic-solvent-based coatings were taken into account. Application of waterborne coatings was determined to be less expensive and to emit less VOC's than the baseline for fog coating. Therefore, use of waterborne coatings in conjunction with air atomized spray (25 percent TE) was selected as BDT for fog coating. Fog coating operations can be treated as color coating operations and can meet the recommended standard for exterior color coating by using waterborne coatings with air atomized spray.

*D. Selection of Affected Facility*

For purposes of this standard, the affected facility has been defined as each spray booth. The term "spray booth" includes not only the enclosure and ventilation system for spray coating, but also the spray gun(s) and ancillary equipment such as pumps and hoses associated with the enclosure.

The choice of the affected facility is based on the Agency's interpretation of section 111 of the Clean Air Act and on the judicial construction of its meaning. See *ASARCO, Inc., v. EPA*, 578 F. 2d 319 (D.C. Cir. 1978). Under Section 111, standards of performance must apply to new stationary sources of pollution, i.e., sources that begin construction, reconstruction, or modification after EPA proposes the standards.

A "source" is defined as "any building, structure, facility, or installation which emits or may emit air pollutant" [section 111(a)(3)]. Most industrial plants, however, consist of numerous pieces or groups of equipment that emit air pollutants and that may be viewed as "sources." The EPA therefore uses the term "affected facility" to designate the equipment, within a particular kind of plant, that is chosen as the "source" covered by a given standard.

In designating the affected facility, EPA determines which piece or group of equipment is the appropriate unit (the source) for separate emission standards in the particular industrial context involved. The determination is made in light of the terms and purposes of Section 111. One major consideration in this decision is that a narrow designation usually brings replacement equipment under standards of performance sooner.

If, for example, an entire plant is designated as the affected facility, the standard will cover no part of the plant unless the replacement causes the plant as a whole to be "modified" or "reconstructed." The plant as a whole is *modified* only if its aggregate emissions are increased by the physical change in it, or by the change in its methods of operating. Similarly, the plant is *reconstructed* only if (1) its cost of replacement exceeds 50 percent of the fixed capital costs required to build a comparable new facility and (2) meeting the applicable standards is technologically and economically feasible.

On the other hand, if each piece of equipment is designated as the affected facility, then as each piece is replaced, the new piece will be a new source subject to the standard. Since the purpose of Section 111 is to minimize emissions by achieving emission limitations reflecting BDT at all new sources, a narrow designation of the affected facility is presumed to be the best choice. It ensures that the standard will cover new emission sources within plants as they are installed.

This presumption can be eliminated, however, if a broader designation of the affected facility would (1) result in a greater emission reduction than would a narrow designation or (2) avoid exorbitant costs.

Several combinations of process equipment (spray booths, flashoff areas, and ovens) were evaluated as affected facilities. Three alternative designations of the affected facility were considered: (1) Each exterior coating operation, consisting of all spray booths, flashoff areas, and ovens; (2) each group of spray booths that is served by a common oven or drying area and that sequentially apply exterior coatings to a part; and (3) each spray booth.

The first alternative, each exterior coating operation (all associated spray booths, flashoff areas, and ovens), was the broadest designation considered. This designation virtually precludes existing facilities from becoming affected through the reconstruction provisions. The capital cost of a drying oven ranges from 5 to 27 times the capital cost of a typical spray booth at batch and conveyorized operations, respectively. Theoretically, if the affected facility included the drying oven, each spray booth in a three-booth conveyorized line could be rebuilt up to nine times without triggering the reconstruction provisions.

Another disadvantage of this broader definition is that it is ambiguous. For example, a spray booth might become part of an affected facility when used in conjunction with one group of spray booths to coat a part, but could cease to be part of an affected facility when used in conjunction with a different group of spray booths. This ambiguity would be especially likely to arise with batch coating lines (i.e., nonconveyorized), where the relationship between different spray booths is not constrained by the position of the booths on a conveyorized line. Therefore, this alternative was not selected.

The second alternative (each group of spray booths served by a common drying area that sequentially apply exterior coatings to a part) is a narrower definition than the first and is best suited to a conveyorized line in which multiple spray booths are routinely used to coat the same parts. This narrower definition of affected facility is also ambiguous. Therefore, this alternative was not selected as the affected facility.

The spray booth is the narrowest and simplest equipment grouping that could be considered as the affected facility. The main advantage of this definition is that it would potentially result in more facilities becoming subject to the NSPS due to reconstruction provisions, thereby resulting in a greater emission reduction (at reasonable cost) than could be achieved under the other two definitions considered. Because the total cost of the affected facility is smaller for this definition than for the other two definitions, reconstruction provisions of the NSPS would be triggered by a smaller capital expenditure. This fact would presumably result in a greater number of spray booths being brought into compliance as reconstructed facilities.

Another advantage of this definition is its compatibility with the proposed standards. Because different emission limits are recommended for prime and color coating and texture and touch-up coating, this narrow definition of affected facility would ensure that each type of coating operation within an affected spray booth uses BDT. Therefore, this alternative was selected as the designation of affected facility.

*E. Selection of Emission Points*

The emission points to be regulated by this NSPS are the individual spray booths. The spray booths are the largest source of VOC emissions (80 percent of total VOC emissions). The flashoff areas and ovens combined account for the remaining amount (20 percent). The cost of directly controlling emissions from ovens and flashoff areas with add-on controls is unreasonable, as described in the section on applicable control technologies. However, BDT may indirectly reduce VOC emissions from the ovens and flashoff areas as less VOC's will be present.

*F. Selection of Format for Standard*

An emissions standard is proposed for the spray booth. This reflects BDT and offers flexibility to the industry. The formats considered for allowable emissions from the spray booths were: (1) Mass of VOC's per unit area of plastic coated, (2) mass of VOC's per unit volume of coating consumed, and (3) mass of VOC's per unit volume of coating solids applied.

The first format considered was mass of VOC's per unit area of plastic coated (i.e., kg of VOC's per 1,000 $m^2$ of plastic coated). Its main advantage is that it directly relates emissions to plant productivity (measured in $m^2$ of plastic coated). One consequence is that it would result in different levels of control at different plants because of variations in coating thickness. Its major disadvantage is that it is difficult to measure the surface area of the complex shapes characteristic of some plastic parts used in business machines. Therefore, mass of VOC's per unit area of plastic coated was not selected as the format.

The second format considered was the mass of VOC's per unit volume of coating consumed (i.e., kg of VOC's per *l* of coating sprayed). Its main advantage is that it relates the amount of VOC's (kg VOC) emitted to the amount of coating (*l* of coating) sprayed. Its major disadvantage is that it does not give credit for improving TE. Therefore, mass of VOC's per unit volume of coating consumed was not selected as the format.

The third format considered, mass of VOC's per unit volume of coating solids applied (i.e., kg of VOC's per *l* of coating solids applied), is the most equitable measurement because this format directly relates the amount of VOC's (kg VOC) emitted to the amount of coating (*l* of coating) applied. This format would allow coaters several options in reducing VOC emissions by using various low-VOC-content coatings and by improving the spray application TE. Therefore, the proposed format for the spray booth is mass of VOC's per unit volume of coating solids applied. Values for mass of VOC per unit volume of coating solids applied (kg VOC/*l* of coating solids applied) can be computed from the mass of VOC's per *l* of coating divided by the volume fraction of solids in the coating and the TE.

*G. Selection of Actual Standards*

1. EMI/RFI Shielding

No standard is proposed for EMI/RFI shielding because the cost effectiveness of each control option was judged to be unreasonable.

2. Exterior Coating

Different standards are proposed for prime and color coating, and texture and touch-up coating based on the different BDT's. For purposes of the standard, fog coating is considered a type of color coating, although it is based on a different BDT. The proposed standards are summarized in Table 1.

Different standards were developed for prime and color coating, and texture and touch-up coating because air-

assisted airless spray application of prime and color coats has been demonstrated, while application of texture and touch-up coats with this equipment has not. The BDT for all exterior coating processes except fog coating is based on using organic-solvent-based coatings containing 60 percent solids and 0.58 kg VOC// of coating solids, as applied. The BDT for prime and color coating is the application of these coatings at 40 percent TE with air-assisted airless or electrostatic spray equipment; therefore, the numerical emission limit for prime and color coats is 1.5 kg VOC// of solids applied. The BDT for texture and touch-up coating is application of these coatings at 25 percent TE with air atomized spray equipment; therefore, the numerical emission limit for texture and touch-up coating is 2.3 kg VOC// of coating solids applied.

The standards for prime, color, texture, and touch-up coating can also be met by the use of waterborne coatings applied at 25 percent TE. Waterborne coatings have been well demonstrated for use as exterior coatings and are of reasonable cost compared to organic-solvent-based coatings containing 60 percent solids.

Fog coating is considered to be a type of color coating. The primary difference between fog and color coating is the greater film thickness of the color coat compared to that of the fog coat. The BDT for fog coating is the application of waterborne coatings at a TE of 25 percent with air atomized spray equipment. While this BDT can actually achieve an emission limit of about 1.2 kg VOC// of coating solids applied, the proposed standard is 1.5 kg VOC// of coating solids applied. The higher value was chosen because there is no accurate, nondestructive method of measuring film thickness on plastic parts, and there may be overlap in the range of film thickness typical of fog coats and color coats. These two factors make it difficult to distinguish between fog coating and color coating.

*H. Modification/Reconstruction Considerations*

A modification is defined as certain physical or operational changes to an existing facility that result in an increased emission rate of any pollutant to which the standard applies (40 CFR 60.14). Upon modification, an existing facility becomes an affected facility and, therefore, becomes subject to the standard. Affected facilities at 216 plants are expected to be subject to the proposed standards in the first 5 years after promulgation. Alterations characteristic of this surface coating industry that would increase emissions may include the addition of application equipment and switching from the coating of metal parts to the coating of plastic parts. Any such change might cause a facility to be subject to the standard.

A reconstruction is defined in 40 CFR 60.15 as any replacement of components of an existing facility to the extent that: (1) The fixed capital cost of the new component exceeds 50 percent of the fixed capital cost of a comparable new facility, and (2) it is technologically and economically feasible to meet the applicable standards. An existing facility designated by the Administrator as reconstructed is subject to the standard. Reconstructions characteristic of the surface coating industry may include replacement of the coating application equipment.

*I. Performance Testing and Monitoring Requirements*

Section 114(a) authorizes EPA to require sources to monitor, test, keep records, and make reports.

Monthly performance testing requirements are included in the proposed standards. Performance testing of VOC emissions from prime, color, texture, and touch-up coating in each affected spray booth will be required. Such testing requires that records be kept of each coating, dilution solvent, and type of spray equipment used in each affected spray booth. Monthly performance testing was selected because of the variation in VOC content among different colors of the BDT coatings. For example, BDT for prime and color coats is use of a 60 percent volume solids coating applied at 40 percent transfer efficiency. The emission limit for prime and color coats is 1.5 kg VOC// of coating solids applied. Not all colors of "60 percent" volume solids coatings can meet this emission limit. Some colors contain more VOC (less solids) than others. On a daily or weekly basis, a long run of a "high" VOC color could result in the emission limit being exceeded even though BDT was used. Monthly veraging accounts for the variation in VOC content among different colors of the BDT coatings. Monthly averaging also allows for short runs of special colors, for example, to color match a single new part to an old product color.

If daily or weekly averaging were chosen, the emission limit would have to be increased to account for the variations described. This could result in allowing greater use of less than BDT materials, such as 50 percent volume solids coatings. Monthly averaging will require greater use of BDT coating and provides more long-term incentive to develop BDT coatings that meet the emission limit regardless of color.

The monthly performance testing procedure for determining compliance with the proposed standards is summarized as follows:

1. Determine the mass of VOC's used for prime, color, texture, and touch-up coating. The owner or operator may determine the VOC content of coatings, as received, using Reference Method 24, or from coating manufacturer data determined using Reference Method 24, or by other methods approved by the Administrator. Reference Method 24, "Determination of Volatile Matter Content, Density, Volume Solids, and Weight Solids of Surface Coating" (45 FR 65956), provides the data necessary to determine the VOC content of coatings in mass of volatile organics per unit volume of coating solids. Reference Method 24 would be used by the owner or operator, or by the coating supplier, to determine the VOC content of each coating, as received. Coaters and coating manufacturers are encouraged to use the data sheets appearing in "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA–450/3–84–019.

2. Select the appropriate TE for each exterior coating operation from the table provided in the standards. The proposed standards allow coaters the option of demonstrating TE's higher than the assigned values to the satisfaction of the Administrator; however, an owner or operator must submit sufficient data for the Administrator to judge the accuracy of the TE claims.

3. Calculate the mass of VOC emissions per unit volume of coating solids applied from each affected spray booth for prime, color, texture, and touch-up coating. If in a nominal 1-month period, the emission values obtained are all less than or equal to the applicable emission limits, the spray booth would be in compliance for that month.

For coaters choosing to use add-on control devices to meet the standard, the owner or operator would submit a description and rationale for an appropriate test method to the Administrator for approval prior to installation of the control device. Test methods and testing schedules for add-on controls will be approved on a case-by-case basis by the Administrator.

Additional monitoring requirements, such as monitoring of incinerator temperature and measuring the VOC concentration in carbon adsorber exhaust streams, may be necessary for

those who choose to meet the proposed standards using add-on control devices. Add-on control devices are not expected to be used in this industry, so no monitoring requirements have been specified in the proposed rule. These requirements will be decided on by the Administrator on a case-by-case basis.

*J. Reporting and Recordkeeping Requirements*

Section 114(a) authorizes EPA to require sources to monitor, test, keep records, and make reports.

The monthly compliance test will consist of calculations of the mass of VOC's emitted per unit volume of coating solids applied, as described in the previous section. Records of performance for each 1-month test period would be kept by the owner or operator for a minimum of 2 years. A statement of compliance with numercial limits would be reported to the Administrator semiannually and a report of the values of any exceedances of numerical limits would be sent to the Administrator quarterly.

**V. Administrative Requirements**

*A. Public Hearing*

A public hearing will be held, if requested, to discuss the proposed standards in accordance with section 307(d)(5) of the Clean Air Act. Persons wishing to make oral presentations should contact EPA at the address given in the **ADDRESSES** section of this preamble. Oral presentation will be limited to 15 minutes each. Any member of the public may file a written statement with EPA before, during, or within 30 days after the hearing. Written statements should be addressed to the Central Docket Section address given in the **ADDRESSES** section of this preamble.

A verbatim transcript of the hearing and written statements will be available for public inspection and copying during normal working hours at EPA's Central Docket Section in Washington, DC (see **ADDRESSES** section of this preamble).

*B. Docket*

The docket is an organized and complete file of all the information submitted to or otherwise considered by EPA in the development of this proposed rulemaking. The principal purposes of the docket are: (1) To allow interested parties to identify and locate documents so that they can effectively participate in the rulemaking process and (2) to serve as the record in case of judicial review [except for interagency review materials [section 307(d)(7)(A)]).

*C. Clean Air Act Procedural Requirements*

1. Administrator Listing—Section 111.

As prescribed by Section 111 of the Clean Air Act, as amended, establishment of standards of performance for the surface coating of plastic parts for business machines was preceded by the Administrator's determination that these sources contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The rationale for this determination appears elsewhere in today's **Federal Register.**

2. Periodic Review—Section 111

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.

3. External Participation—Section 117

In accordance with Section 117 of the Act, publication of this proposal was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies. In addition, numerous discussions were held with industry representatives and trade associations during development of the proposed standards. The Administrator will welcome comments on all aspects of the proposed regulations, including economic and technological issues.

Comments are also specifically invited on the number of facilities nationwide and transfer efficiency. Any comments submitted to the Administrator on these issues should contain specific information and data pertinent to an evaluation of the magnitude and severity of its impact and suggested alternative courses of action that could avoid this impact.

4. Economic Impact Assessment—Section 317

Section 317 of the Clean Air Act requires the Administration 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 the proposed regulations and for other regulatory alternatives. All aspects of the assessment were considered in the formulation of the proposed standards to ensure that the proposed standards would represent the best system of emission reduction considering costs. The economic impact assessment is included in the BID.

*D. Office of Management and Budget Reviews*

1. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* Comments on these requirements should be submitted to the Office of Information and Regulatory Affairs of OMB, marked "Attention: Desk Officer for EPA," as well as to EPA. This final rule will respond to any OMB or public comments on the information collection requirements.

2. Executive Order 12291 Review

Under Executive Order 12291, EPA must judge whether a regulation is "major" and therefore subject to the requirement of a Regulatory Impact Analysis. This proposed regulation is not major because it 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. The industry-wide annualized costs in the fifth year after the standards would go into effect would be a net credit, less than the $100 million established as the first criterion for a major regulation in the Order. The estimated overall price decrease of 24 percent for small plants and 13 percent for large plants associated with the proposed standards would not be considered a "major increase in costs or prices" specified as the second criterion in the Order. The economic analysis of the proposed standards' effect on the industry did not indicate any significant adverse effects on competition, investment, productivity, employment, innovation, or the ability of U.S. firms to compete with foreign firms (the third criterion in the Order).

This regulation was submitted to OMB for review as required by Executive Order 12291. Any written comments from OMB to EPA and any EPA response to those comments will be included in Docket No. A–83–50. This docket is available for public inspection at EPA's Central Docket Section, which is listed under the **ADDRESSES** section of this notice.

*E. Regulatory Flexibility Act Compliance*

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this rule, if promulgated, will not have a significant economic impact on a substantial

number of small business entities. Under the proposed standards, the nationwide annualized costs would be $30 million less than at the baseline, a net savings. Therefore, the proposed rule is expected to have no significant adverse impacts on small businesses.

**List of Subjects in 40 CFR Part 60**

Air pollution control, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements, Surface coating of plastic parts for business machines.

Dated: December 22, 1985.

**Lee M. Thomas,**

*Administrator.*

It is proposed that 40 CFR Part 60 be amended as follows:

## PART 60—[AMENDED]

1. The authority citation for Part 60 continues to read as follows:

**Authority:** Secs. 101, 111, 114, 116, 301, Clean Air Act as amended (42 U.S.C. 7401, 7411, 7414, 7416, 7601).

2. Part 60 is amended by adding a new Subpart TTT to read as follows:

**Subpart TTT—Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines**

Sec.



## Subpart TTT—Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts of Business Machines

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

(a) The provisions of this subpart apply to each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats.

(b) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after (date of publication of this final rule in the **Federal Register**).

### § 60.721 Definitions.

(a) As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in Subpart A of this part.

"Business machine" means a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:

(1) Products classified as typewriters under SIC Code 3572;

(2) Products classified as electronic computing devices under SIC Code 3573;

(3) Products classified as calculating and accounting machines under SIC Code 3574;

(4) Products classified as telephone and telegraph equipment under SIC Code 3661;

(5) Products classified as office machines, not elsewhere classified, under SIC Code 3579; and

(6) Photocopy machines, a subcategory of products classified as photographic equipment under SIC Code 3861.

"Coating solids applied" means the coating solids that adhere to the surface of the plastic business machine part being coated.

"Color coat" means the coat applied to a part that affects the color and gloss of the part, not including the prime coat or texture coat. This definition includes fog coating.

"Conductive sensitizer" means a coating applied to a plastic substrate to render it conductive for purposes of electrostatic application of subsequent prime, color, texture, or touch-up coats.

"Fog coating" (also known as mist coating and uniforming) means a thin coating applied to plastic parts that have molded-in color or texture or both to improve color uniformity.

"Nominal 1-month period" means either a calendar month, 30-day month, accounting month, or similar monthly time period that is established prior to the performance test (i.e., in a statement submitted with notification of anticipated actual startup pursuant to 40 CFR 60.7(2)).

"Plastic parts" means panels, housings, bases, covers, and other business machine components formed of synthetic polymers.

"Prime coat" means the initial coat applied to a part when more than one coating is applied, not including conductive sensitizers or EMI/RFI shielding coatings.

"Spray booth" means the structure housing automatic or manual spray application equipment where a coating is applied to plastic parts for business machines.

"Texture coat" means the rough coat that is characterized by discrete, raised spots on the exterior surface of the part.

"Touch-up coat" means the coat applied to correct any imperfections in the finish after color or texture coats have been applied.

"Transfer efficiency" means the ratio of the amount of coating solids deposited onto the surface of a plastic business machine part to the total amount of coating solids used.

"VOC emissions" means the mass of VOC's emitted from the surface coating of plastic parts for business machines expressed as kilograms of VOC's per liter of coating solids applied.

(b) All symbols used in this subpart not defined below are given meaning in the Act or Subpart A of this part.

$D_c$ = density of each coating as received (kilograms per liter)
$D_d$ = density of each diluent VOC (kilograms) per liter)
$L_c$ = the volume of each coating consumed, as received (liters)
$L_d$ = the volume of each diluent VOC added to coatings (liters)
$L_s$ = the volume of coating solids consumed (liters)
$M_d$ = the mass of diluent VOC's consumed (kilograms)
$M_o$ = the mass of VOC's in coatings consumed, as received (kilograms)
N = the volume-weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter)
T = the transfer efficiency (fraction)
$V_s$ = the proportion of solids in each coating, as received (fraction by volume)
$W_o$ = the proportion of VOC's in each coating, as received (fraction by weight)

### § 60.722 Standards for volatile organic compounds (VOC's).

Each owner or operator of any affected facility which is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by §§ 60.8 and 60.723 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first. No affected facility shall cause the discharge into the atmosphere in excess of:

(a) 1.5 kilograms of VOC's per liter of coating solids aplied from prime coating of plastic parts for business machines.

(b) 1.5 kilograms of VOC's per liter of coating solids applied from color coating of plastic parts for business machines.

(c) 2.3 kilograms of VOC's per liter of coating solids applied from texture coating of plastic parts for business machines.

(d) 2.3 kilograms of VOC's per liter of coatings solids applied from touch-up coating of plastic parts for business machines.

**§ 60.723 Performance tests and compliance provisions.**

(a) Paragraphs 60.8 (d) and (f) do not apply to the performance test procedures required by this section.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each nominal 1-month period for each affected facility according to the procedures in this section.

(1) The owner or operator shall determine the composition of coatings by analysis of each coating, as received, using Reference Method 24, from data that have been determined by the coating manufacturer using Reference Method 24, or by other methods approved by the Administrator.

(2) The owner or operator shall determine the volume of coating and the mass of VOC used for dilution of coatings from company records during each nominal 1-month period. If a common coating distribution system serves more than one affected facility or serves both affected and nonaffected spray booths, the owner or operator shall estimate the volume of coatings used at each facility by using procedures approved by the Administrator.

(i) The owner or operator shall calculate the volume-weighted average mass of VOC's in coatings emitted per unit volume of coating solids applied (N) at each coating operation during each nominal 1-month period for each affected facility. Each 1-month calculation is considered a performance test. Except as provided in paragraph (b)(2)(iii) of this section, N will be determined by the following procedures:

(A) Calculate the mass of VOC's used ($M_o + M_d$) for each coating operation during each nominal 1-month period for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

where n is the number of different coatings used during each nominal 1-month period and m is the number of different diluent VOC's used during each nominal 1-month period. ($\Sigma L_{dj} D_{dj}$ will be ) if no VOC's are added to the coatings, as received.)

(B) Calculate the total volume of coating solids consumed ($L_s$) in each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

where n is the number of different coatings used during each nominal 1-month period.

(C) Select the appropriate transfer efficiency from Table 7. If the owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below shall be determined by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the accuracy of the transfer efficiency claims.

TABLE 7.—TRANSFER EFFICIENCIES

| Application methods | Transfer efficiency |
|---|---|
| Air atomized spray | 0.25 |
| Air-assisted airless spray | 0.40 |
| Electrostatic air spray | 0.40 |

(D) Where more than one application method is used within a single surface coating operation, the owner or operator shall determine the composition and volume of each coating applied by each method through a means acceptable to the Administrator and compute the weighted average transfer efficiency by the following equation:

$$T = \frac{\sum_{i=1}^{n} \sum_{k=1}^{p} L_{cik} V_{sik} T_k}{L_s}$$

where n is the number of coatings used and p is the number of application methods used.

(E) Calculate the volume-weighted average mass of VOC's emitted per unit volume of coating solids applied (N) during each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$N = \frac{M_o + M_d}{L_s T}$$

(ii) Where the volume-weighted average mass of VOC's emitted to the atmoshpere per unit volume of coating solids applied (N) is less than or equal to 1.5 kilograms per liter for prime coats, is less than or equal to 1.5 kilograms per liter for color coats, is less than or equal to 2.3 kilograms per liter for texture coats, and is less than or equal to 2.3 kilograms per liter for touch-up coats, the affected facility is in compliance.

(iii) If each individual coating *I* used by an affected facility has a VOC content (kg VOC// of solids), as received, which when divided by the lowest transfer efficiency at which the coating is applied results in a value equal to or less than 1.5 kilograms per liter for prime and color coats and equal to or less than 2.3 kilograms per liter for texture and touch-up coats, the affected facility is in compliance provided that no VOC's are added to the coatings during distribution or application.

(iv) If an affected facility uses add-on controls to control VOC emissions and if the owner or operator can demonstrate to the Administrator that the volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of coating solids applied (N) is within limits expressed in paragraph (b)(2)(ii) of this section because of this equipment, the affected facility is in compliance. In such cases, compliance will be determined by the Administrator on a case-by-case basis.

**§ 60.724 Reporting and recordkeeping requirements.**

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided for in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for the initial nominal 1-month period from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.723(b)(2)(iii), a list of the coatings used during the initial nominal 1-month period, the VOC content of each coating calculated from data determined using Reference Method 24 or by another method approved by the Administrator, and the lowest transfer efficiency of any coating application equipment used during the initial nominal 1-month period.

(b) Following the initial report, each owner or operator shall:

(1) Report the volume weighted average mass of VOC's per unit volume of coating solids applied for each

affected facility during each nominal 1-month period in which the facility is not in compliance with the applicable emission limit specified in § 60.722. Reports of noncompliance shall be submitted on a quarterly basis, occurring every 3 months following the initial report; and

(2) Submit statements that each affected facility has been in compliance with the applicable emission limit specified in § 60.722. Statements of compliance shall be submitted on a semiannual basis.

(c) These reports shall be postmarked not later than 10 days after the end of the periods specified in § 60.724(b)(1) and § 60.724(b)(2).

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine monthly VOC emissions from each affected facility as specified in 40 CFR 60.7(d).

(e) Reporting and recordkeeping requirements for facilities using add-on controls will be determined by the Administrator on a case-by-case basis.

**§ 60.725 Test methods and procedures.**

(a) The reference methods in Appendix A to this part except as provided under § 60.8(b) shall be used to determine compliance with § 60.722 as follows:

(1) Method 24 for determination of VOC content of each coating as received.

(2) For Method 24, the sample must be at least a 1-liter sample in at least a 1-liter container.

(b) Other methods may be used to determine the VOC content of each coating if approved by the Administrator before testing.

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