
United States
Environmental Protection
Agency

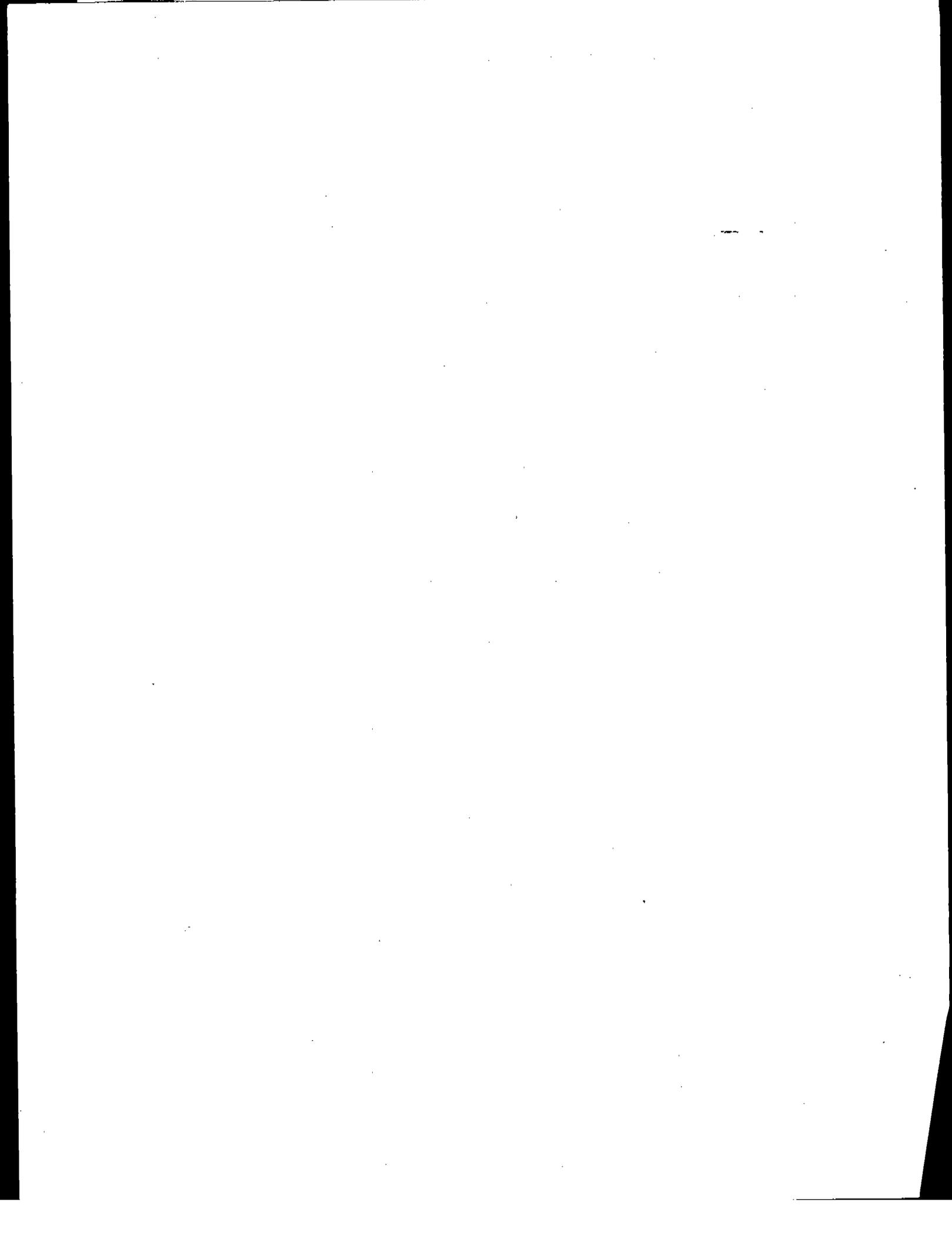
Office of Air Quality
Planning and Standards
Research Triangle Park, NC 27711

EPA 453/B-97-001
January 1997

Air



A Guidebook on How to Comply with the Shipbuilding and Ship Repair (Surface Coating) Operations National Emission Standards for Hazardous Air Pollutants



SHIPBUILDING/REPAIR NESHAP & CTG

Dear Reader:

A copy of the following documents may be retrieved from the Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network (TTN)--under Clean Air Act , rules/policy and guidance.

NOTE: the following files have been uploaded for the CTG notice : " readctg.shp," " factshp.ctg," and " shipctg.". The implementation guidebook and the brochure files are respectively, "shipguid" and "brochure."

The TTN can be accessed via

- 1) A communication software: 919-541-5742
- 2) The Internet: " <http://www.epa.gov/oar> " and select TTN
or " http://www.epa.gov/oar/ttn_bbs.html "
- 3) HELP line : 919-541-5384

RELATED DOCUMENTS: (available on the TTN under the Clean Air Act)

1. "Alternative Control Techniques Document: Surface Coating Operations at Shipbuilding and Repair Facilities" EPA 453/R-94-032; NTIS PB95-19741 (JUNE 1994)
2. "National Emission Standards for Hazardous Air Pollutants for Shipbuilding and Ship Repair (Surface Coating) Operations," *Proposed rule*, 59 FR 62681 (December 6, 1994).
3. "National Emission Standards for Hazardous Air Pollutants for Shipbuilding and Ship Repair (Surface Coating) Operations," *Final rule*, 60 FR 64330 (December 15, 1995).
4. "National Emission Standards for Hazardous Air Pollutants for Shipbuilding and Ship Repair (Surface Coating) Operations," *Direct final rule*, 61 FR 30814 (June 18, 1996)
5. "Control Techniques Guidelines for Shipbuilding and Ship repair Operations (Surface Coating)," 61 FR 44050, (August 27, 1996).
6. "National Emission Standards for Hazardous Air Pollutants for Source Categories: Aerospace and Shipbuilding and Ship Repair (Surface Coating) Operations," *Final rule; corrections*, 61 FR 66226, (December 17, 1996).
7. "A Guidebook on How to Comply with the Shipbuilding and Ship Repair (Surface Coating) Operations National Emission Standards for Hazardous Air Pollutants," EPA-453/B-97-001, January 1997.
8. A brochure: "New Regulation Controlling Air Emissions From Shipbuilding and Ship Repair Operations," EPA-453/F-97-001, January 1997.

Copies of these and other documents used in the development of the shipbuilding/repair regulation and guidance documents may be obtained from Air and Radiation Docket and Information center, Washington, D.C. (For assistance call 202-260-7548 or Fax: 202-260-4400 your request-- Attention Docket Number A-92-11.)

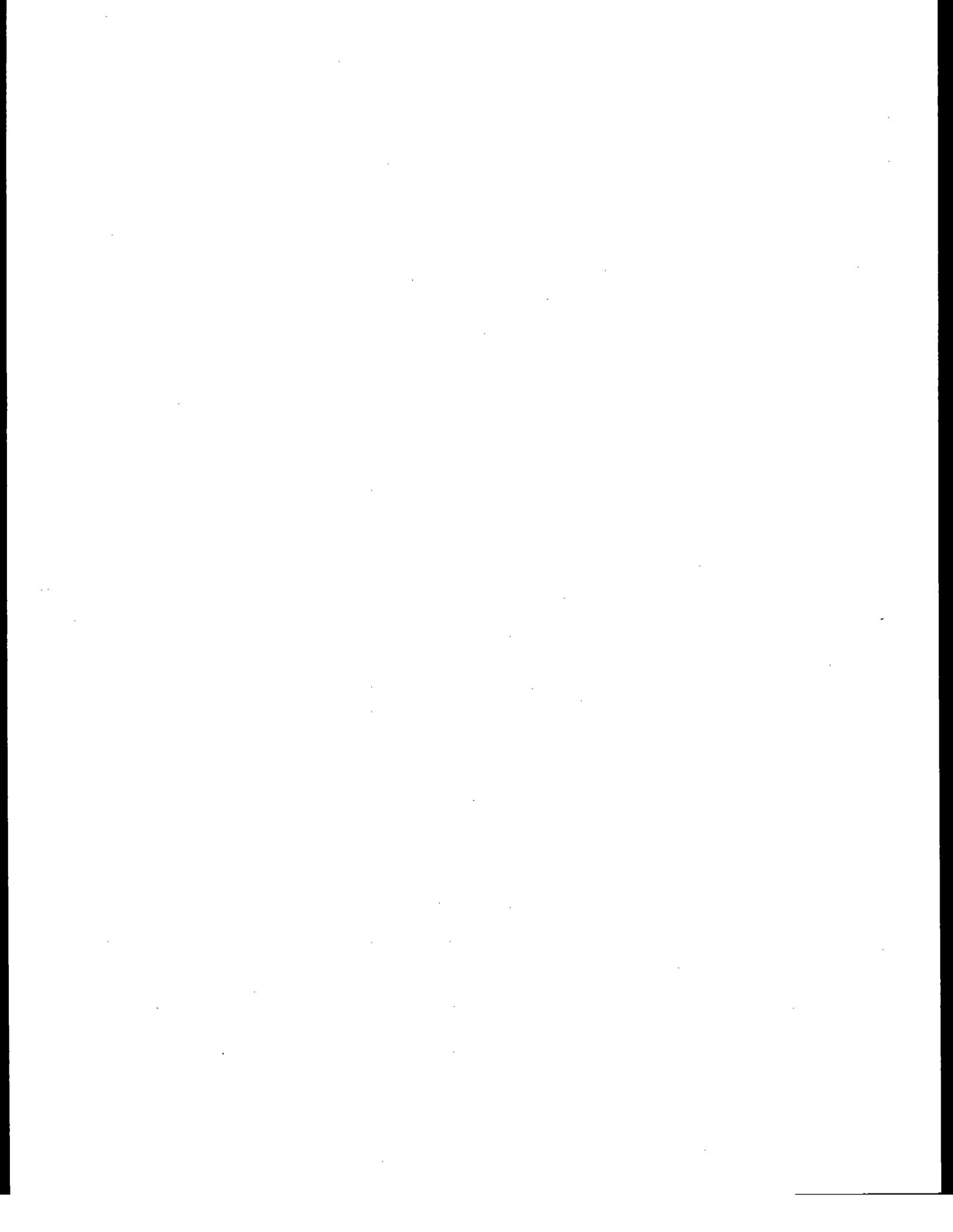
February 1997

For Further information please contact: Dr. Mohamed Serageldin
US EPA; OAQPS (MD-13)
RTP, NC 27711

Ph: 919-541-2379

Fax: 919-541-5689

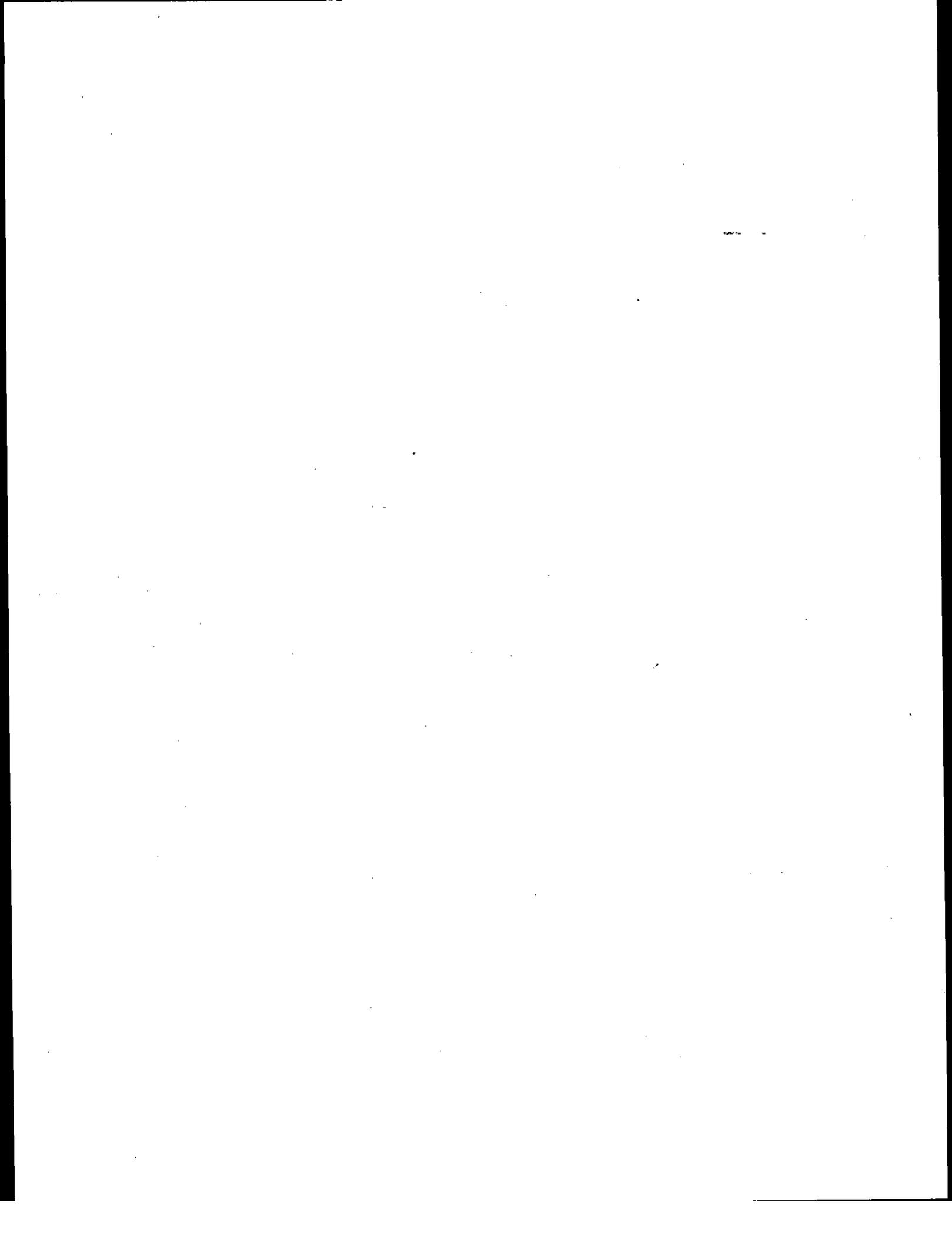
Email: Serageldin.Mohamed@epamail.epa.gov



**A GUIDEBOOK ON HOW TO COMPLY
WITH THE SHIPBUILDING AND SHIP REPAIR
(SURFACE COATING) OPERATIONS
NATIONAL EMISSION STANDARDS
FOR HAZARDOUS AIR POLLUTANTS**

**Coatings and Consumer Products Group
Emission Standards Division
Office of Air Quality Planning and Standards
U. S. Environmental Protection Agency
Research Triangle Park, NC 27711**

January 1997



This report has been reviewed by the Emission Standards Division (ESD), Office of Air Quality Planning and Standards (OAQPS), U. S. Environmental Protection Agency (EPA), and approved for publication. Mention of trade names or commercial products is not intended to constitute endorsement or recommendation for use. For more information on this regulation, please call your State or local air pollution control agency; your local, regional, or national shipbuilding trade association; or your EPA Regional Office. Contact EPA's Control Technology Center (CTC) Hotline at (919) 541-0800 to get information on air program contacts. To order single copies of this guidebook, contact the Library Services Office (MD-35), U. S. EPA, Research Triangle Park, NC 27711; the OAQPS Technology Transfer Network (TTN), (919) 541-5742 via modem (for assistance with the TTN, call (919) 541-5384) or via the Internet at <http://ttnwww.rtpnc.epa.gov>; or the National Technical Information Services, 5285 Port Royal Road, Springfield, VA 22161.

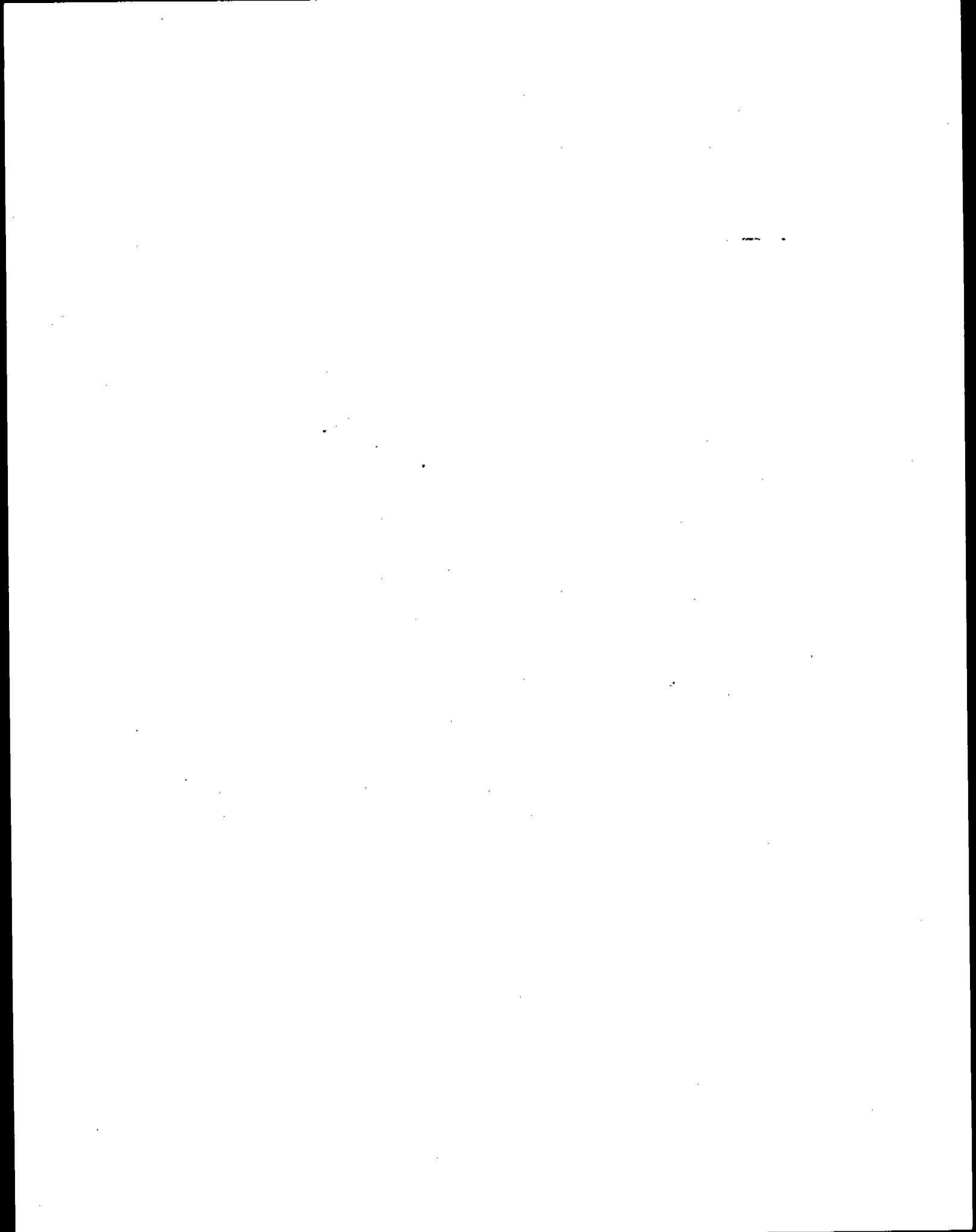


TABLE OF CONTENTS

	<u>Page</u>
CHAPTER 1 INTRODUCTION	1
CHAPTER 2 OVERVIEW OF THE REGULATION	3
CHAPTER 3 DOES THIS REGULATION APPLY TO ME?	9
CHAPTER 4 WHAT DO I NEED TO DO TO COMPLY?	13
CHAPTER 5 HOW WILL I DEMONSTRATE COMPLIANCE?	17
CHAPTER 6 WHAT RECORDKEEPING AND REPORTING WILL I NEED TO DO?	23
CHAPTER 7 WHAT ARE MY POLLUTION PREVENTION OPTIONS?	27
CHAPTER 8 HOW DOES THIS REGULATION RELATE TO OTHER FEDERAL AND STATE OR LOCAL REQUIREMENTS?	29
CHAPTER 9 HOW MUCH WILL IT COST?	31
CHAPTER 10 WHERE CAN I GO FOR MORE INFORMATION AND ASSISTANCE?	35
APPENDIX A. FEDERAL REGISTER NOTICES: FINAL REGULATION AND DIRECT FINAL REGULATION	
APPENDIX B. GLOSSARY OF TERMS	
APPENDIX C. LIST OF ESTIMATED NESHAP MAJOR-SOURCE SHIPYARDS	
APPENDIX D. EXAMPLE INITIAL NOTIFICATION	
APPENDIX E. EXAMPLE IMPLEMENTATION PLAN	
APPENDIX F. EXAMPLE FORMS	
APPENDIX G. EXAMPLE CALCULATIONS	

LIST OF TABLES

	<u>Page</u>
TABLE 2-1. VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS	6
TABLE 2-2. SUMMARY OF RECORDKEEPING AND REPORTING REQUIREMENTS	7
TABLE 3-1. U.S. SHIPYARD LOCATIONS	12
TABLE 5-1. STEP-BY-STEP COMPLIANCE OPTIONS	19
TABLE 9-1. ESTIMATED COSTS FOR COMPLYING WITH NESHAP, \$/YR	33
TABLE 10-1. EPA REGIONAL OFFICE CONTACTS	37

LIST OF FIGURES

	<u>Page</u>
Figure 3-1. 437 active U.S. shipbuilding facilities (August 1991)	11
Figure 4-1. Compliance option	15
Figure 5-1. Flow diagram of compliance procedures	18
Figure 5-2. VOC data sheet	20
Figure 5-3. VOHAP data sheet	21

CHAPTER 1

INTRODUCTION

BACKGROUND

In November of 1995, the U. S. Environmental Protection Agency (EPA) issued national regulations to control hazardous air pollutant (HAP) materials from shipbuilding and ship repair facilities designated as major sources. The regulation appeared in the December 15, 1995 edition of the Federal Register [volume 60, beginning on page 64330].

Why is EPA regulating the shipbuilding and ship repair industry? Section 112 of the Clean Air Act as amended in 1990 (CAA) requires the EPA to evaluate and control HAP emissions. Pursuant to Section 112(c) of the CAA, the EPA published in the Federal Register the initial list of source categories that emit HAP on July 16, 1992 (57 FR 31576). This list included shipbuilding and ship repair (surface coating) operations as major sources of HAP emissions.

The CAA was created, in part, "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and productive capacity of its population" 42 U.S.C. §7401(b). The final regulation will protect the public health by reducing emissions of HAP material from surface coating operations at shipbuilding and ship repair facilities.

Approximately 35 shipyards are estimated to be major sources of HAP emissions, emitting over 9.1 megagrams per year (Mg/yr) (10 tons/yr) of an individual HAP or over 23 Mg/yr (25 tons/yr) of total HAP, including toluene,

xylene, ethylbenzene, methanol, methyl ethyl ketone, methyl isobutyl ketone, ethylene glycol, and glycol ethers. All of these pollutants can cause reversible or irreversible toxic effects following exposure. The potential toxic effects include irritation of the eyes, nose, throat, and skin, and damage to the blood cells, heart, liver, and kidneys.

All existing major source facilities must be in compliance with the requirements of the regulation on December 16, 1997. The final standards will reduce nationwide HAP emissions from shipyard surface coating operations by at least 318.5 Mg/yr (350 tons/yr) from a baseline level of 1,362 Mg/yr (1,497 tons/yr).

PURPOSE OF GUIDEBOOK

The purpose of this guidebook is to provide a straightforward overview of this regulation and to equip facilities with the basic information they need to comply with the regulation. This guidebook is not a complete and full statement of the legal and technical requirements of the regulation. See the Federal Register notice (included as Appendix A to this guidebook) for the complete text of the regulation.

Several example questions and responses have been included in this guidebook. The responses represent the Agency's best guidance on issues raised by industry or State/Regional representatives. They are included to provide some basis of consistency for all interested parties.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 2
OVERVIEW OF THE REGULATION

The final regulation is applicable to all existing and new shipbuilding and ship repair facilities that are major sources of HAP or are located at plant sites that are major sources. Major source facilities that are subject to this regulation must not apply any marine coating with a volatile organic HAP (VOHAP) content in excess of the applicable "as-applied" limit and must implement the work practices required in the regulation. In addition, these sources must keep specified records and submit periodic reports.

APPLICABILITY

Section 112(a) of the CAA defines major source as a source, or group of sources, located within a contiguous area and under common control that emits or has the potential to emit, considering controls, 9.1 Mg/yr (10 tons/yr) or more of any individual HAP or 22.8 Mg/yr (25 tons/yr) or more of any combination of HAP. Area sources are stationary sources that do not qualify as "major" on the basis of their "potential to emit". "Potential to emit" is defined in the Section 112 General Provisions (40 CFR part 63.2) as "the maximum capacity of a stationary source to emit a pollutant under its physical or operational design." To determine whether or not it is a major source subject to the rule, a shipbuilding and/or ship repair facility would need to determine the total HAP emissions from its surface coating operations, as well as the total HAP emissions from all other operations at the plant site. The

sum of these emissions would be used to determine major source status. See Chapter 3 for additional information. The term "affected source" as used in this regulation means the shipbuilding and ship repair facility that is subject to the regulation.

COMPLIANCE SCHEDULE

EXISTING SOURCES--

- Effective Date: **December 15, 1995**
- Initial Notification Due: **June 13, 1996**
- Implementation Plan Due: **December 16, 1996**
- Compliance Date: **December 16, 1997**
- First Reporting Period Ends: **June 16, 1998**
- First Compliance Report Due: **August 16, 1998**

NEW SOURCES--

- Initial Notification and Implementation Plan Due: **6 months prior to start-up**
- Compliance Date: **Date of start-up**
- First Reporting Period Ends: **6 months after start-up**
- First Compliance Report Due: **8 months after start-up**

REQUIREMENTS

- In general, the regulation specifies:
- ✓ VOHAP content limits on marine coatings
 - ✓ Work practice standards

- ✓ Recordkeeping
- ✓ Reporting

Each of these requirements is summarized in the following sections.

VOHAP CONTENT LIMITS

No coating may be applied to a ship with an "as-applied" VOHAP content exceeding the applicable limit in Table 2-1. "As applied" includes any thinning; therefore, it is important to use only compliant coatings and not exceed the maximum thinning allowance (if any) for each and every coating.

The final standards impose limits on the VOHAP content of 23 types of coatings used at shipyards. Compliance with the VOHAP limits must be demonstrated on a monthly basis. The promulgated standards include four compliance options to allow owners or operators flexibility in demonstrating compliance with the VOHAP limits. The final standards also allow for an alternative means of compliance other than using compliant coatings, if approved by the Administrator. The Administrator shall approve the alternative means of limiting emissions if, in the Administrator's judgment, (after control) emissions of VOHAP per volume solids (nonvolatiles) applied will be no greater than those from the use of coatings that comply with the applicable VOHAP limits.

WORK PRACTICES

The regulation includes work practice standards to ensure that air pollution resulting from transfer, storage, and handling of paints and solvents associated with surface coating operations are minimized or eliminated. (See § 63.783(b)(1) and (2)).

The final standards also require that all handling and transfer of VOHAP containing materials to and from containers, tanks, vats, vessels, and piping systems be conducted in a manner that minimizes spills and other factors leading to emissions. (This requirement includes hand- or brush-application of coatings.) In addition, containers of paint, thinning solvent, or waste that hold any VOHAP materials must be normally closed (to minimize evaporation) unless materials are being added to or removed from them.

RECORDKEEPING

The regulation requires sources to keep monthly records to document compliance with the regulation. The required documentation includes:

1. All documentation supporting the initial notification;
2. A copy of the affected source's approved implementation plan;
3. The volume of each low-usage-exempt coating applied during the month;
4. Identification of the coatings used during the month, their appropriate coating categories, and the applicable VOHAP limit;
5. Certification of the as-supplied VOC content of each batch of coating and thinning solvent used during the month;
6. A determination of whether containers meet the standards as described in § 63.783(b)(2);
7. The results of any Method 24 or approved VOHAP measurement test conducted on individual containers of

coating and thinning solvent, as applied;
and

8. Additional information, as determined by the compliance procedure(s) that each affected source followed.

An example monthly record is provided in Appendix F. If the source you operate qualifies as an area source or a synthetic area source, you only need to record the total annual volume of coating applied to ships. All records must be kept and maintained for 5 years. A summary of recordkeeping requirements is provided in Table 2-2. (See also Chapter 6 and § 63.788(b).)

REPORTING

For affected sources, the regulation requires an initial notification that you are subject to the regulation, an implementation plan, an initial compliance status report, and then compliance status reports every 6 months. A summary of reporting requirements is provided in Table 2-2. (See also Chapter 6 and § 63.788(c).) An example initial notification is also provided in Appendix D.

For major sources that intend to become (synthetic) area sources by the compliance date, the regulation requires an initial notification that documents your intention to apply an enforceable limitation to keep actual HAP emissions below the major source level(s).

UNITS OF MEASURE

The NESHAP uses the International System of Units (SI) defined in *Standard Practice for Use of the International System of Units (SI) (the Modernized Metric System)*, published by the American Society for Testing and Materials as

publication No. E 380-91. The EPA guidelines require that SI, or metric, units be used. See reference (cover page) on page 8 of this document. Many of the existing State regulations involving marine coatings are expressed in metric units (i.e., grams per liter, g/L). The Metric Conversion Act of 1975 (Section 3 of Public Law 94-168) also supports this approach for the NESHAP units of measure and the examples in this guidebook for demonstrating compliance with the NESHAP.

TABLE 2-1. VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS

Coating Category	VOHAP limits ^{a,b,c}		
	grams/liter coating (minus water and exempt compounds)	grams/liter solids ^d	
		t ≥ 4.5°C	t < 4.5°C ^e
General use	340	571	728
Specialty	--	--	--
Air flask	340	571	728
Antenna	530	1,439	--
Antifoulant	400	765	971
Heat resistant	420	841	1,069
High-gloss	420	841	1,069
High-temperature	500	1,237	1,597
Inorganic zinc high-build	340	571	728
Military exterior	340	571	728
Mist	610	2,235	--
Navigational aids	550	1,597	--
Nonskid	340	571	728
Nuclear	420	841	1,069
Organic zinc	360	630	802
Pretreatment wash primer	780	11,095	--
Repair and maint. of thermoplastics	550	1,597	--
Rubber camouflage	340	571	728
Sealant for thermal spray aluminum	610	2,235	--
Special marking	490	1,178	--
Specialty interior	340	571	728
Tack coat	610	2,235	--
Undersea weapons systems	340	571	728
Weld-through precon. primer	650	2,885	--

^aThe limits are expressed in two sets of equivalent units. Either set of limits may be used for the compliance procedure described in §63.785(c)(1), but only the limits expressed in units of g/L solids (nonvolatiles) shall be used for the compliance procedures described §63.785(c)(2)-(4).

^bVOC (including exempt compounds listed as HAP) shall be used as a surrogate for VOHAP for those compliance procedures described in §63.785(c)(1)-(3).

^cTo convert from g/L to lb/gal, multiply by (3.785 L/gal)(1 lb/453.6 g) or 1/120. For compliance purposes, metric units define the standards.

^dVOHAP limits expressed in units of mass of VOHAP per volume of solids (nonvolatiles) were derived from the VOHAP limits expressed in units of mass of VOHAP per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.

^eThese limits apply during cold-weather time periods, as defined in §63.782. Cold-weather allowances are not given to coatings in categories that permit less than 40 percent solids (nonvolatiles) content by volume. Such coatings are subject to the same limits regardless of weather conditions.

TABLE 2-2. SUMMARY OF RECORDKEEPING AND REPORTING REQUIREMENTS

Requirement	All options		Option 1		Option 2		Option 3	
	Rcd.	Rpt.	Rcd.	Rpt.	Rcd.	Rpt.	Rcd.	Rpt.
Initial notification (§ 63.9(a)-(d))	✓	✓						
Implementation plan (§ 63.787(b))	✓	✓						
Volume of coating applied at unaffected major sources (§ 63.781(b))	✓							
Volume of each low-usage-exempt coating applied at affected sources (§ 63.781(c))	✓	✓						
ID of the coatings used, their appropriate coating categories, and the applicable VOHAP limit	✓	✓						
Determination of whether containers meet the standards described in § 63.783(b)(2)	✓	✓						
Results of M-24 or other approved tests	✓	✓						
Certification of the as-supplied VOC content of each batch	✓							
Certification of the as-applied VOC content of each batch			✓					
Volume of each coating applied			✓	✓				
Density of each thinner and volume fraction of solids (or nonvolatiles) in each batch					✓	✓	✓	✓
Maximum allowable thinning ratio(s) for each batch					✓	✓	✓	✓
Volume used of each batch, as supplied					✓	✓	✓	✓
Total allowable volume of thinner					✓	✓	✓	✓
Actual volume of thinner used					✓	✓	✓	✓
Identification of each group of coatings and designated thinners							✓	✓

Note: Option 4 requirements parallel those shown for Options 1 through 3, depending on whether or not and how thinners are used. When using Option 4, the term "VOHAP" should be used in lieu of the term "VOC".

-CITE-

15 USC Sec. 205a

01/24/94

-EXPCITE-

TITLE 15 - COMMERCE AND TRADE
CHAPTER 6 - WEIGHTS AND MEASURES AND STANDARD TIME
SUBCHAPTER II - METRIC CONVERSION

-HEAD-

Sec. 205a. Congressional statement of findings

-STATUTE-

The Congress finds as follows:

(1) The United States was an original signatory party to the 1875 Treaty of the Meter (20 Stat. 709), which established the General Conference of Weights and Measures, the International Committee of Weights and Measures and the International Bureau of Weights and Measures.

(2) Although the use of metric measurement standards in the United States has been authorized by law since 1866 (Act of July 28, 1866; 14 Stat. 339), this Nation today is the only industrially developed nation which has not established a national policy of committing itself and taking steps to facilitate conversion to the metric system.

(3) World trade is increasingly geared towards the metric system of measurement.

(4) Industry in the United States is often at a competitive disadvantage when dealing in international markets because of its nonstandard measurement system, and is sometimes excluded when it is unable to deliver goods which are measured in metric terms.

(5) The inherent simplicity of the metric system of measurement and standardization of weights and measures has led to major cost savings in certain industries which have converted to that system.

(6) The Federal Government has a responsibility to develop procedures and techniques to assist industry, especially small business, as it voluntarily converts to the metric system of measurement.

(7) The metric system of measurement can provide substantial advantages to the Federal Government in its own operations.

-SOURCE-

(Pub. L. 94-168, Sec. 2, Dec. 23, 1975, 89 Stat. 1007; Pub. L. 100-418, title V, Sec. 5164(a), Aug. 23, 1988, 102 Stat. 1451.)

-REFTEXT-

REFERENCES IN TEXT

CHAPTER 3

DOES THIS REGULATION APPLY TO ME?

APPLICABILITY OF THE REGULATION

The shipbuilding NESHAP is applicable to any major source of HAP emissions using more than 1,000 liters of marine coatings annually. The actual and potential emissions of HAP materials from most shipyards are substantially less than the major source cutoff limits [i.e., 9.1 Mg/yr (10 tons/yr) of any single HAP, or 22.8 Mg/yr (25 tons/yr) of all HAP combined]. To determine the applicability of this regulation to your facility, you must determine whether the plant site as a whole is a major source. A formal HAP emissions inventory should be used to determine if total potential HAP emissions from all HAP emission sources at the plant site meets the definition of a major source. This inventory should include all activities resulting in HAP emissions (whether shipbuilding/repair related or not).

Existing major sources may switch to "synthetic area source" status by obtaining and complying with an enforceable limit on their potential to emit prior to the "compliance date" of the regulation. The "compliance date" for this regulation is December 16, 1997. New major sources are required to comply with the NESHAP requirements upon start up or the promulgation date, whichever is later. If your facility with potential HAP emissions greater than the cutoff limit(s) has not obtained enforceable limits on its potential to emit by the compliance date, and has not complied with the NESHAP requirements, you will be in violation of the NESHAP. All sources that are major

sources for HAP on the compliance date are required to comply permanently with the NESHAP to ensure that the maximum achievable reductions in toxic emissions are achieved and maintained.

Are there any small usage provisions?

Any source having surface coating operations with less than 1,000 liters annual marine coating usage does not have to comply with the MACT standard. This provision gives relief to a source that qualifies as a major source because of activities other than shipbuilding/repair surface coating operations. However, the source is required to keep records of the volume of coating used in a year.

How many facilities are affected and where are they located? The EPA estimates that there are about 437 shipbuilding and ship repair facilities (i.e., shipyards) nationwide. Of the estimated 437 shipyards, 35 are estimated to be major sources of HAP emissions. Figure 3-1 and Table 3-1 show the approximate distribution of the facilities by State. Appendix C lists the known facilities that are believed to be affected by this regulation.

If a major source facility has several painting operations and only some of those operations exceed the minimum 1,000 liters annual marine coating usage, is the shipbuilding NESHAP applicable? The shipbuilding NESHAP is applicable to any major source of HAP (and all associated operations or process steps) that has total marine coating usage greater than the 1,000 liter cutoff. The cutoff

was intended to minimize the recordkeeping and reporting burden for those facilities doing minimal or touch-up painting with marine coatings.

If a ship is docked in a major source facility, are any painting activities conducted by the ship's crew covered by the regulation? All activities conducted within the boundaries of the shipyard must be accounted for, are subject to the requirements of the regulation, and are the responsibility of the shipyard owner/operator. When the Agency collected coatings and solvent usage information from the industry, there was no differentiation made regarding who was applying the various coatings and/or solvents.

What about shipyard painting operations or activities that are conducted away from the actual land-based facilities (i.e., downstream or "down the river")? Some determination would have to be made regarding how far into the water the shipyard's boundaries extend. As initial guidance on this issue, we would recommend that such activities be considered the same as other painting activities and subject to the same requirements.

If a shipyard company uses (leases) facilities owned by the State or Port Authority, who is responsible for determining applicability? The owner or operator of the "affected source" should conduct an emissions inventory to determine major source status based on aggregate air emissions of all HAP material. If it is determined that the facility is a major source, any details involving compliance demonstration and/or reporting would have to be worked with the appropriate enforcement agency.

RULE OF THUMB - RED FLAG ALERTS

If a shipyard answers yes to one or more of the following questions it would suggest that a more in-depth review would be appropriate to determine if the facility is subject to the NESHAP.

1. Did your shipyard use in the last year or does it anticipate using in the current year 75,000 or more liters of paints and solvents?
2. Did your shipyard paint in the last year, or does it anticipate painting in the current year 10 or more ships?
3. Did your shipyard paint in the last year or does it anticipate painting in the current year more than 140,000 sq.meters of ship or vessel surfaces?
4. Did your shipyard's estimating department allocate for its paint shops during the last year or does it anticipate allocating in the current year more than 6000 manhours of painting?
5. Did your shipyard generate and list on a hazardous waste manifest form in the last year more than 15,000 liters of waste solvent?

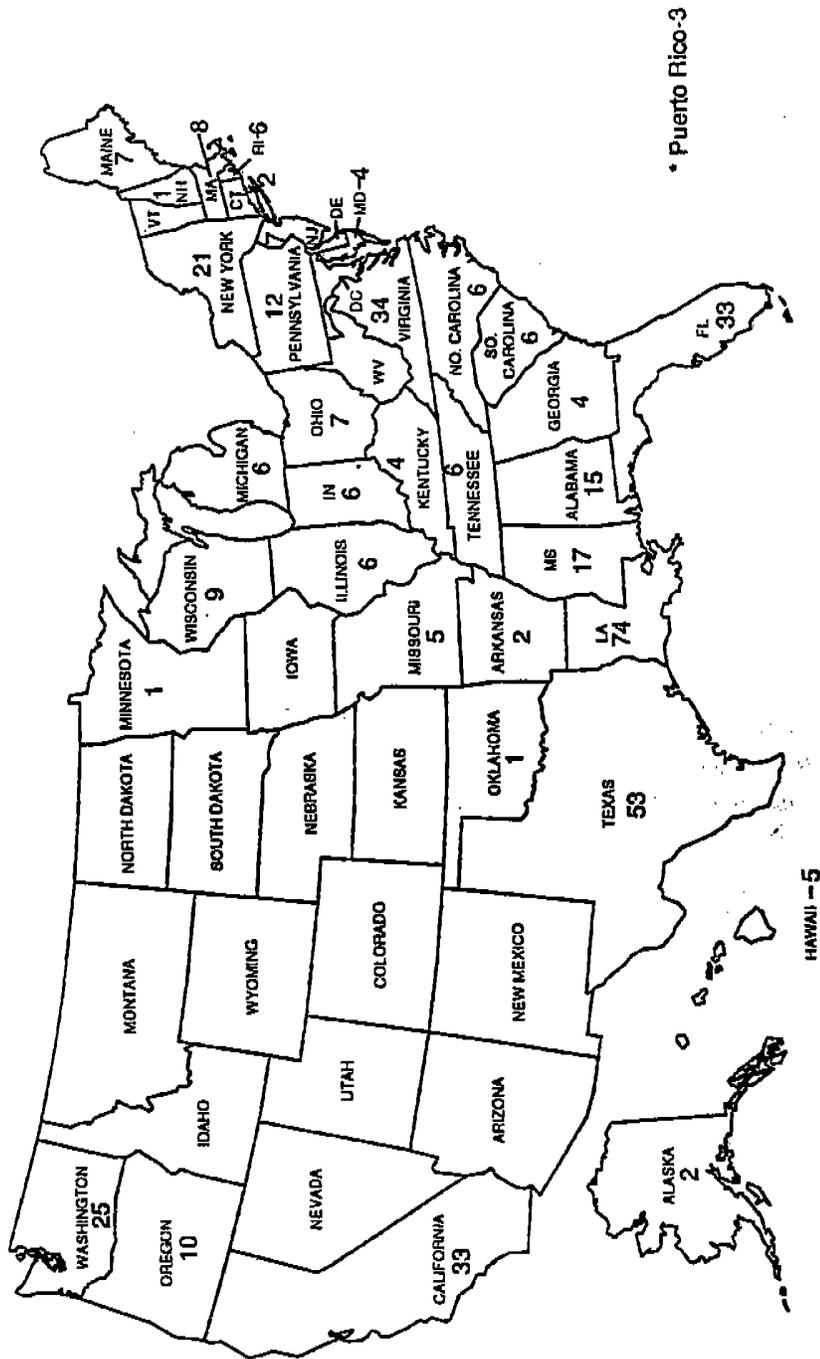


Figure 3-1. 437 active U.S. shipbuilding facilities (August 1991).

TABLE 3-1. U.S. SHIPYARD LOCATIONS*

State	No. of shipyards
Louisiana	74
Texas	53
Virginia	34
California	33
Florida	33
Washington	25
New York	21
Mississippi	17
Alabama	15
Pennsylvania	12
Oregon	10
Wisconsin	9
Massachusetts	8
Maine	7
New Jersey	7
Ohio	7
Indiana	6
Illinois	6
North Carolina	6
South Carolina	6
Michigan	6
Rhode Island	6
Tennessee	6
Missouri	5
Hawaii	5
Georgia	4
Maryland	4
Puerto Rico	3
Alaska	2
Arkansas	2
Connecticut	2
Minnesota	1
Oklahoma	1
New Hampshire	1
TOTAL	437

*This summary data was collected July/August 1991.

CHAPTER 4

WHAT DO I NEED TO DO TO COMPLY?

OVERVIEW

The following four principles should be followed to comply with all requirements of the regulation:

1. Buy/Use only compliant coatings;
2. Do not thin any coating beyond the associated maximum allowable thinning ratio;
3. Use good work practices when handling or transferring coatings, solvents, and/or resulting wastes; and
4. Follow all recordkeeping and reporting requirements.

COATING COMPLIANCE OPTIONS

Because different shipyards track coating and solvent usage in various ways, four compliance options were developed and included in the regulation. Shipyards can choose one or more (and any combination of) compliance options to demonstrate compliance in their monthly records and semiannual compliance report. Options 1-3 are based on VOC being used as a surrogate for VOHAP.

- Option 1: *Coatings to which thinning solvent will not be added*--If you never thin coating prior to application, you will probably want to choose option 1, which is the most straightforward and least burdensome in terms of recordkeeping and reporting requirements. Compliance is determined on a coating-by-coating basis.

- Option 2: *Coatings to which thinning solvent will be added - coating-by-coating compliance*--Should be used when coatings are thinned and you want to determine compliance on a coating-by-coating basis.
- Option 3: *Coatings to which the same thinning solvent will be added - group compliance*--Similar to Option 2, with the exception that compliance is demonstrated for a group of coatings that are "grouped" by thinner type.
- Option 4: *Demonstration of compliance through an alternative test method*--Involves demonstration of compliance using an alternative test method that measures VOHAP content of a coating rather than VOC content as in options 1 through 3. Similar/parallel options to those under 1 through 3 are implied under option 4. (See Figure 4-1.)

Additional detail on these options is provided in Chapter 5.

Is averaging allowed? No. For purposes of complying with the NESHAP, no marine coating with a VOHAP content exceeding the applicable limit in Table 2-1 can be applied. The issue of averaging was considered during the development of the NESHAP, and average limits were proposed to industry representatives as part of the regulatory alternatives evaluated prior to proposal. (The average limits were significantly lower than the maximum never-to-be-exceeded limits.) Industry, as represented by

those participants in the meetings held with EPA, did not want average limits because of the additional recordkeeping burden and the fact that most existing State regulations utilize the same type of maximum never-to-be-exceeded limits for marine coatings.

It is important to note that a type of averaging is allowed for certain recordkeeping and reporting purposes (compliance option 3). This "averaging" of recordkeeping/reporting data associated with coatings grouped together by the type of thinning solvent is only meant to provide flexibility to shipyards and hopefully reduce the paperwork burden (i.e., labor hours) needed to compile monthly records. This approach will be beneficial to any facility doing minimal thinning or using one or two particular thinners for all of their marine coatings.

The limits for this regulation are set in terms of grams of VOHAP per liter of solids (g/L) and are "never to be exceeded." What does this mean from a compliance perspective? The regulation requires that each and every container of "as applied" coating must comply with the applicable maximum or "never to be exceeded" VOHAP content limit. Averaging of compliant and noncompliant paints is not allowed. The semi-annual compliance reports can be completed using units of g VOHAP/L of solids or g VOHAP/L of coating for shipyards using compliance option 1. The NESHAP provides this flexibility to allow shipyards to report coating compliance in those terms with which they are most familiar or comfortable. However, the solids (nonvolatiles) based units are to be used with compliance options 2, 3, and 4 and in resolving any "equivalency" questions.

What if I want to use a different control technique? You may use another control technique, as long as you meet and can demonstrate an equivalent emission reduction for your facility. You will need EPA approval to choose another technique, as well as get EPA approval on the monitoring parameters or alternative test methods that you will use.

WORK PRACTICES

Besides complying with the VOHAP emission limits discussed in the above compliance options, you will also be required to meet work practice standards. The procedures, equipment, training, etc., to meet work practice standards are to be identified and explained in your implementation plan. Also, the procedures to be used for documenting (record and report compliance) that the work practice standards are being met have to be described in your implementation plan as well. Examples of specific work practice standards are included as part of the example implementation plan in Appendix E.

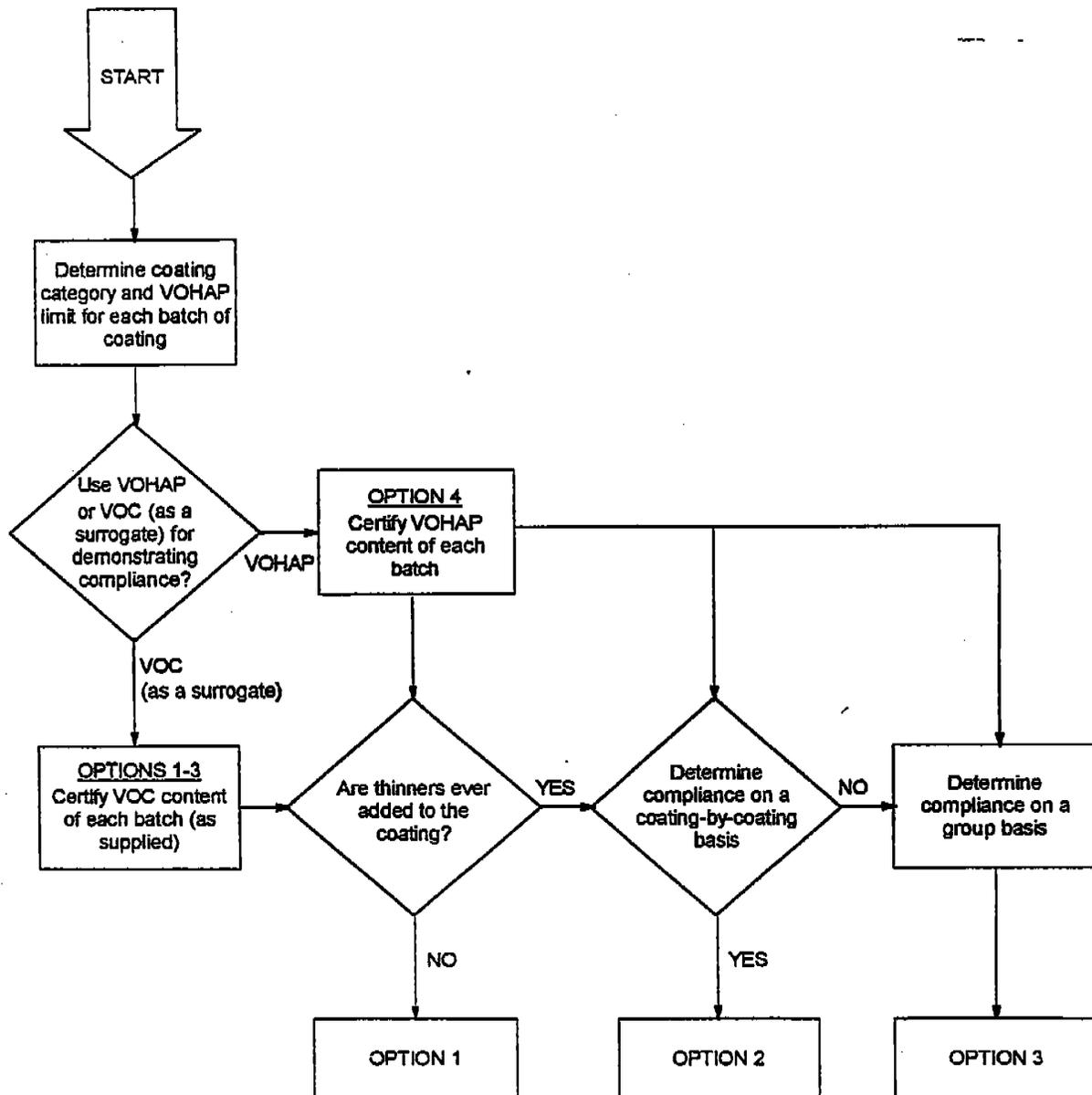


Figure 4-1. Compliance options.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 5

HOW WILL I DEMONSTRATE COMPLIANCE?

Once you have selected which compliance option(s) you intend to use (documented in your implementation plan), you have until the 15th day of each calendar month to compile the required information to demonstrate compliance for the previous month. Figure 5-1 provides a flow diagram of all four compliance procedures and Table 5-1 gives step-by-step instructions for demonstrating compliance using each of the compliance options. The required information varies slightly, depending on the selected compliance option, but generally involves certifying the total amount of each type (i.e., category) of coating applied during the month compiled with the applicable VOHAP limit in Table 2-1.

The "certification" of each coating is the key to demonstrating compliance. Figure 5-2 can be used for certifying the VOC content of a specific coating, and Figure 5-3 can be used for certifying the VOHAP content of a specific coating. Other forms may be used to certify either the VOC or VOHAP content of a marine coating (see examples in Appendix E) and it should be noted that the majority of the work associated with the certification and compliance demonstration needs to be done once the coatings are ordered or received by the shipyard. Many of the coatings will be used repeatedly and having a good database of coating compliance certification information will greatly simplify the monthly compliance burden.

If thinning solvents are sometimes or routinely added to coatings prior to application, there are equations to be used (see § 63.785(c)(2)) to calculate the maximum allowable thinning ratio and the total allowable volume of thinner. Once again, you can save yourself a lot of time by collecting the relevant coating and solvent data prior to the actual application in the field. Similar provisions are included for cold weather (temperatures $< 4.5^{\circ}\text{C}$) conditions, as well as separate VOHAP limits (see Table 2-1).

The source has an existing inventory of paints that may exceed the NESHAP limits. Can the source finish its inventory after the compliance date? Can the source enter into consent orders or have a grace period to use it up? The other alternative would be to dispose of it as hazardous waste. In light of the recent direct final regulation (June 18, 1996), which extended the compliance date from December 16, 1996 to December 16, 1997, the EPA believes there should be no reason to have noncompliant coatings in inventory at any shipyard on the new compliance date. Industry representatives and trade associations have worked with the EPA for the past 5 years in developing the NESHAP and the CTG and are well aware of the limits. The coating manufacturers and the National Paint and Coatings Association (NPCA) are similarly informed.

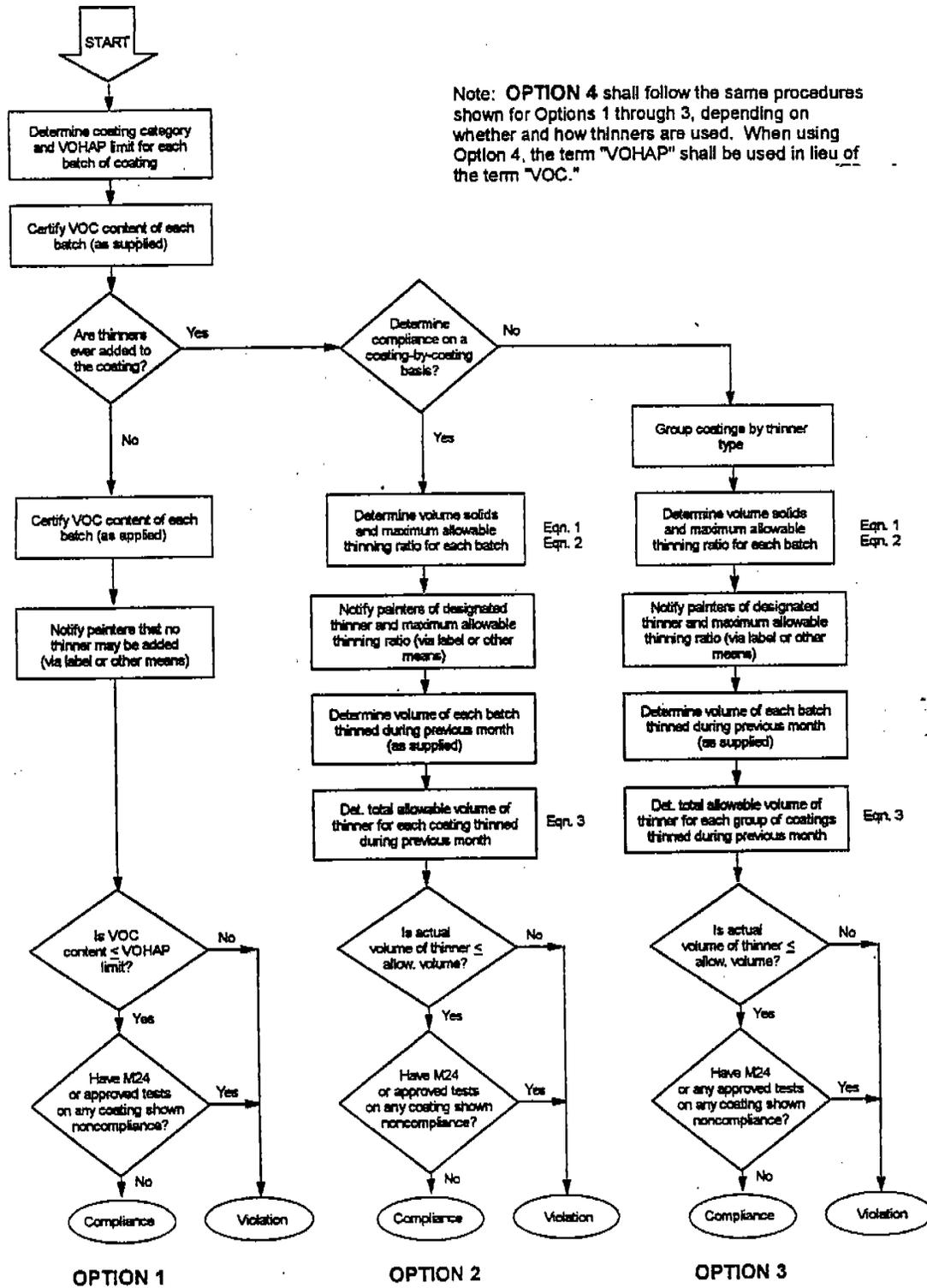


Figure 5-1. Flow diagram of compliance procedures.

TABLE 5-1. STEP-BY-STEP COMPLIANCE OPTIONS

<i>Step 1.0</i>	Do you want to demonstrate compliance using VOC data (Options 1, 2, and 3) or VOHAP data (Option 4)?
<i>Step 2.0</i>	Set up a coatings and thinning solvent database: determine coating category, VOHAP limit, and VOC/VOHAP content of each batch of coating and thinning solvent (as supplied).
<i>Step 3.0</i>	Depending on whether or not and how thinning solvents are added to a specific coating or group of coatings, select compliance options 1, 2, or 3.
OPTION 1	
<i>Step 4.1</i>	Certify VOC/VOHAP content of each batch of coating (as applied).
<i>Step 5.1</i>	Notify painters that no thinning solvent may be added to the coating and maintain a sample of the documentation.
<i>Step 6.1</i>	Document in monthly records that the VOC/VOHAP content of each coating is less than or equal to the applicable VOHAP limit. (Compliance is thereby demonstrated.)
OPTION 2	
<i>Step 4.2</i>	Determine volume solids (nonvolatiles) and maximum allowable thinning ratio for each batch of coating (using Equations 1 and 2, if necessary).
<i>Step 5.2</i>	Notify painters of designated thinning solvent that may be added and the maximum allowable thinning ratio and maintain a sample of the documentation.
<i>Step 6.2</i>	Determine the "as supplied" amount (volume) of each batch of coating that was thinned during the previous month.
<i>Step 7.2</i>	Determine the total allowable amount (volume) of thinning solvent for each coating thinned during the previous month using Equation 3.
<i>Step 8.2</i>	Document in monthly records that the volume of actual thinner added to each batch of coating is less than or equal to the allowable volume. (Compliance is thereby demonstrated.)
OPTION 3	
<i>Step 4.3</i>	Group coatings by thinner type (e.g., all coatings thinned with the same thinning solvent).
<i>Step 5.3</i>	Determine volume nonvolatiles (solids) and maximum allowable thinning ratio for each batch of coating (using Equations 1 and 2, if necessary).
<i>Step 6.3</i>	Notify painters of designated thinning solvent that may be added and the maximum allowable thinning ratio and maintain a sample of the documentation.
<i>Step 7.3</i>	Determine the "as supplied" amount (volume) of each batch of coating that was thinned during the previous month.
<i>Step 8.3</i>	Determine the total allowable amount (volume) of thinning solvent for each group of coatings thinned during the previous month using Equation 3.
<i>Step 9.3</i>	Document in monthly records that the volume of actual thinner added to the group of coatings is less than or equal to the allowable volume. (Compliance is thereby demonstrated.)

VOC DATA SHEET:¹
PROPERTIES OF THE COATING "AS SUPPLIED" BY THE MANUFACTURER²

Coating Manufacturer: _____

Coating Identification: _____

Batch Identification: _____

Supplied To: _____

Properties of the coating as supplied² to the customer:

- A. Coating Density: $(D_c)_s$ _____ g/L
 ASTM D1475-90 Other³
- B. Total Volatiles: $(m_v)_s$ _____ Mass Percent
 ASTM D2369-93 Other³
- C. Water Content:
 1. $(m_w)_s$ _____ Mass Percent
 ASTM D3792-91 ASTM D4017-90 Other³
 2. $(v_w)_s$ _____ Volume Percent
 Calculated Other³
- D. Organic Volatiles: $(m_o)_s$ _____ Mass Percent
- E. Nonvolatiles: $(v_n)_s$ _____ Volume Percent
 Calculated Other³
- F.⁴ VOC Content (VOC)_s:
 1. _____ g/L solids (nonvolatiles)
 2. _____ g/L coating (less water and exempt compounds)
- G. Thinner Density: D_{th} _____ g/L
 ASTM _____ Other³

Remarks: (use reverse side)

Signed: _____ Date: _____

¹Adapted from EPA-340/1-86-016 (July 1986), p. II-2.²The subscript "s" denotes each value is for the coating "as supplied" by the manufacturer.³Explain the other method used under "Remarks."⁴Include mass of HAP "exempt" compounds.

Figure 5-2. VOC Data Sheet.

VOHAP DATA SHEET:¹
PROPERTIES OF THE COATING "AS SUPPLIED" BY THE MANUFACTURER²

Coating Manufacturer: _____

Coating Identification: _____

Batch Identification: _____

Supplied To: _____

Properties of the coating as supplied² to the customer:

- A. Coating Density: $(D_c)_s$ _____ g/L
 ASTM D1475-90 Other³
- B. Total Volatiles: $(m_v)_s$ _____ Mass Percent
 ASTM D2369-93 Other³
- C. Water Content:
 1. $(m_w)_s$ _____ Mass Percent
 ASTM D3792-91 ASTM D4017-90 Other³
 2. $(v_w)_s$ _____ Volume Percent
 Calculated Other³
- D. HAP Volatiles: $(m_{HAP})_s$ _____ Mass Percent
- E. Nonvolatiles: $(v_n)_s$ _____ Volume Percent
 Calculated Other³
- F. VOHAP Content (VOHAP)_s:
 1. _____ g/L solids (nonvolatiles)
 2. _____ g/L coating (less water and exempt compounds)
- G. Thinner VOHAP Density: $D_{th(VOHAP)}$ _____ g/L
 ASTM _____ Other³

Remarks: (use reverse side)

Signed: _____ Date: _____

¹Adapted from EPA-340/1-86-016 (July 1986), p. II-2.²The subscript "s" denotes each value is for the coating "as supplied" by the manufacturer.³Explain the other method used under "Remarks."

Figure 5-3. VOHAP Data Sheet.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 6

WHAT RECORDKEEPING AND REPORTING WILL I NEED TO DO?

RECORDKEEPING

This regulation requires that you keep records to document your compliance status with the regulation. It is recommended that someone at each facility be identified to maintain all NESHAP compliance recordkeeping information as required for each option used during the reporting periods. These records must be maintained for 5 years. Many, but not all, recordkeeping items are reported. The recordkeeping requirements are summarized in Table 2-2.

REPORTING

You must submit all reports to the Administrator before the 60th day following completion of each 6-month period after the compliance date. The "Administrator" is the appropriate Regional Office of the U. S. Environmental Protection Agency (as listed in Table 10-1 of this guidebook) or the delegated State or local authority. You may contact the appropriate EPA Regional Office to identify those State or local agencies with delegated authority. The required reports may be sent by U.S. Mail, fax, or by another courier (including electronic submission). The reporting requirements are summarized in Table 2-2. For existing sources, the first six month compliance period ends June 16, 1998, and the associated compliance report is due August 16, 1998.

RECORDKEEPING AND REPORTING REQUIREMENTS

For both recordkeeping and reporting, specific requirements vary according to which particular compliance option you choose. (These compliance options are detailed in Chapter 4.) Regardless of which option you choose, you must record and, in most cases, report the following items:

- **Initial notifications**

If your source had an initial start-up date before December 15, 1996, (this would include all affected existing facilities), you should have submitted an initial notification by June 15, 1996. Any new source (with an initial start-up date on or after December 15, 1996) must submit an initial notification 6 months prior to start-up. (See Appendix D.)

- **Implementation Plan**

Existing sources must submit an implementation plan by December 16, 1996. A sample implementation plan is included as Appendix E. The sample implementation plan is only an example; you can use any format as long as your implementation plan provides the following information:

- (1) Coating Compliance Procedures
 - (2) Recordkeeping Procedures. You must include the procedures for maintaining all required records, including the procedures for gathering necessary data and making calculations
 - (3) Transfer, Handling, and Storage Procedures. You must include the procedures for ensuring compliance with the requirements of the regulation as discussed in Chapter 5
- **Monthly records**
 - (1) Volume of each low-usage-exempt coating applied (by month)
 - (2) Identification of the coatings used, their EPA categories, and VOHAP limits
 - (3) Results of Method 24 or other approved measurements on individual containers
 - (4) Certification of as-supplied VOC content for each batch of coating* (See examples in Appendix F)

Additional recordkeeping and reporting requirements depend on your facility's specific compliance procedures. (These procedures are described in Chapter 5 of this guidebook.) The following discussion presents these requirements according to the specific compliance procedures.

Option 1 - No Thinning Solvents Added

If your facility does not add any thinning solvents to coatings, you may opt to use option 1. If you choose this option, you must record the following information:

- Certification of the as-applied VOC content of each batch of coating (which is the same as the as-supplied VOC content)
- The volume of each coating applied*
- Compliance violations, if applicable

Option 2 - Coating-By-Coating Compliance

If you choose this type of compliance, you must record the following information for each coating for each month:

- Designated thinner for the coating and its density
- Volume fraction of solids (nonvolatiles) for each batch of the coating, including calculations *
- Maximum allowable thinning ratio for each batch of the coating, including calculations *
- Cold weather dates and times, below 4.5°C (if cold weather VOHAP content limits are used) *
- Volume of each batch of the coating applied *
- Total allowable volume of thinner, including calculations *
- Actual volume of thinner used
- Compliance violations, if applicable

Option 3 - Group Compliance

If you choose this type of compliance, you must record the following information:

- Designated thinner for the group of coatings and its density
- Mass fraction and volume fraction of solids (nonvolatiles) for each batch of each coating in the group, including calculations *

*Must be recorded, but not reported.

- Maximum allowable thinner ratio for each batch, including calculations *
- Cold weather dates and times, below 4.5°C *
- Identification of coating groups and thinners *
- Volume applied of each batch of each coating in the group *
- Total allowable volume of thinner, including calculations *
- Actual volume of thinner used*
- Compliance violations, if applicable

Option 4 - Alternative Test Method

Compliance may be demonstrated through an alternative (i.e., other than EPA Method 24) test method. If you choose an alternative test method where compliance is based on actual VOHAP content, rather than the VOC surrogate used under Options 1-3, you must record and report the Administrator-approved VOHAP test method or certification procedure. The other recordkeeping and reporting requirements are identical to those of Options 1, 2, or 3, depending on if and how thinners are used.

Method 311 - Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph was developed by EPA as a result of the Wood Furniture (Surface Coating) NESHAP. However, any alternative test method must meet the specified accuracy limits for sensitivity, duplicates, repeatability, and reproducibility coefficient of variation described in Section 63.786 Test methods and Procedures of the final regulation (see Appendix A).

(Note: When using Option 4, the term "VOHAP" should be used instead of the term "VOC" since compliance is to be demonstrated using actual VOHAP content--see Figure 5-1 and Table 5-1.)

What if a violation in the standard occurs?

If you detect a violation of the standards, you must record additional information for the remainder of the reporting period during which the violation occurred. Your violation may be covered by a Federally-approved exemption (e.g., a promulgated exemption from an emission limitation or standard published in the Federal Register). If it is, you must report the following information:

- A summary of the number and duration of the violations, classified by reason
- A summary of the number and total duration of incidents in which the monitoring procedures did not operate smoothly or produced data that was inaccurate, classified by reason.
- The compliance status on the last day of the reporting period and information on whether compliance was continuous or interrupted during the reporting period.

For other violations, a federally-approved exemption may not apply to the violation. In these instances, you must report the following information:

- The magnitude of each violation
- The reason for each violation
- A description of the corrective action taken for each violation, which should include actions taken to minimize each violation and the action taken to prevent reoccurrences

- All quality assurance activities performed on any monitoring procedures.

There has been some confusion regarding the initial notification and the implementation plan for complying with the shipbuilding NESHAP.

When are they due? When the final regulation was published in the Federal Register on December 15, 1995 (see Appendix A), both the initial notification and implementation plan were to be submitted by June 15, 1996. However, the direct final regulation published on June 18, 1996 in the Federal Register extended the due date for submitting your implementation plan until December 16, 1996, and extended the compliance date to December 16, 1997. It was EPA's intent to only extend the due date for submitting the implementation plan and extend the compliance date. Initial notifications were never an issue and were due June 13, 1996.

CHAPTER 7

WHAT ARE MY POLLUTION PREVENTION OPTIONS?

What is Pollution Prevention? As stated in the Pollution Prevention Act of 1990, Congress has declared it to be the nation's policy that, wherever feasible, pollution should be prevented or reduced at the source. The Act states that source reduction is more desirable than waste management and pollution control. Source reduction is defined as any practice that reduces the amount of any hazardous substance entering the waste stream or otherwise released into the environment (from a process) prior to recycling, treatment, or disposal. Therefore, you must also consider wastewater, hazardous waste, and solid waste effects and regulations as well as air pollutant emissions in selecting any method of control.

What are my options? This regulation allows for pollution prevention measures to be used when complying with the requirements of the regulation. The entire regulation focuses on pollution prevention in that the marine coating limits are based on switching to lower VOC/VOHAP coatings (alternatives are allowed, but require special approval) and the work practice standards are intended to reduce evaporative losses and prevent spills and accidental emissions.

There are several potential pollution prevention options for the shipbuilding and ship repair industry, many of which can be included as work practice standards in the facility-specific implementation plan.

These options include:

- More efficient application equipment
- Extensive operator training
- Reformulated marine coatings
- Recycling of cleaning solvents
- Alternative cleaning materials
- Containment around storage areas for VOC/VOHAP-containing materials

Other pollution prevention measures include (1) carefully handling and transferring all VOC/VOHAP containing materials to and from containers, tanks, vats, vessels, and piping systems so that spills are minimized and (2) closing all thinning solvent and waste containers that hold any VOC/VOHAP unless adding or removing materials from them.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 8

HOW DOES THIS REGULATION RELATE TO OTHER FEDERAL AND STATE OR LOCAL REQUIREMENTS?

PERMITTING

Will I need a State operating permit?

Yes. Under title V, all major sources are required to obtain permits—no deferrals or exemptions are allowed for these major sources.

Title V operating permit program background. Title V of the CAA as amended in 1990 requires the establishment of State-implemented operating permits programs with Federal oversight. Prior to the 1990 amendments, sources were not required by Federal law to obtain operating permits for sources of air pollution emissions. However, many States issued their own operating permits to certain sources. You may have been required to obtain an operating permit for your facility under a State permit program in the past. Now, all major sources are required to obtain a title V operating permit.

Permit requirements in general. The operating permit program will incorporate all applicable Federal CAA regulation requirements and any State or local government requirements. Therefore, permit requirements will be at least as stringent as requirements mandated by the Federal CAA regulations (e.g., the shipbuilding and ship repair NESHAP).

The basic format of operating permits is detailed (codified) in part 70 of title 40 of the *Code of Federal Regulations* (40 CFR part 70). Owners or operators of facilities subject to Federal CAA regulations will have to:

- ▶ submit a permit application;
- ▶ submit compliance plans and schedules;
- ▶ comply with all applicable air emission limits and standards listed in the permit (e.g., the shipbuilding and ship repair NESHAP);
- ▶ conduct monitoring (if required), submit monitoring reports, and make semi-annual certifications of the source's compliance status;
- ▶ submit applications for any permit modifications;
- ▶ submit applications for permit renewals every 5 years; and
- ▶ pay a permit or emission fee.

Does my State have a permitting program?

All States must develop a title V operating permits program. States were required to submit their permitting programs to EPA for approval by November 15, 1993. One year later, the EPA was to have approved the States' permitting programs and authorized the States to administer their programs. As of July 1996, approvals have been published in the Federal Register for 42 State and 56 local programs; additionally, EPA has proposed to approve another 4 State agency programs and 3 local agency programs. The EPA's Technology Transfer Network (TTN), an electronic bulletin board system, has the latest status of permit program submittals and approvals. (See Chapter 10 for instructions on how to access the TTN.) You may also contact your State or local

air pollution control agency for more information on the status of your State's title V operating permit program.

When do I apply for my operating permit?

Your deadline for submitting a title V operating permit application will depend on when your State or local title V permitting program is approved by the EPA. In general, your application will be due within 12 months after the title V program approval date. However, some State and local permitting authorities have shorter deadlines. Once you have your operating permit, it must be renewed or updated at least every 5 years.

EPA's GENERAL PROVISIONS

On March 16, 1994, EPA published the General Provisions for all regulations codified in part 63 (i.e., all NESHAP) of the Code of Federal Regulations (CFR). These General Provisions were published in the Federal Register in volume 59, beginning on page 12408. When a source becomes subject to a regulation in part 63, it automatically is subject to the General Provisions as well. However, individual regulations in part 63 may override part or all of the General Provisions. In the case of this regulation, EPA has overridden some of the requirements of the General Provisions. Table 1 of the shipbuilding regulation (located on page 64344 of the Federal Register text, see Appendix A) explains in detail which sections apply and which sections are overridden.

**STATE OR LOCAL MARINE
COATING REGULATIONS**

State or local requirements that may have affected you prior to the new Federal regulation for shipbuilding and ship repair continue to apply. The new Federal regulation is the minimum emission control that is required nationally. Some State and local agencies do require stricter limits. If the current State or local standard is less stringent than the Federal regulation, the Federal regulation must be met.

The format of State or local standards may be different also. For example, the California Air Resources Board (CARB), the various air quality management districts in California, and the State of Louisiana have marine coating limits expressed in terms of mass (g) of VOC per volume (L) of coating less water and exempt compounds. State regulations typically relate to VOC rather than VOHAP. Accordingly, State rules may have shorter compliance periods (e.g., daily rather than monthly). The NESHAP was based primarily on the marine coating limits in California, and the solids- (nonvolatiles) based limits of the NESHAP are equivalent to those limits expressed in the California marine coating regulation.

In addition to air pollution regulations, shipyard surface coating operations may also be subject to wastewater and solid waste disposal regulations. Contact your State or local permitting authority for more information.

CHAPTER 9

HOW MUCH WILL IT COST?

OVERVIEW

The cost of complying with the regulation will typically involve additional material (coatings) and recordkeeping and reporting costs. As summarized in Chapters 4 and 5, you only have to use compliant coatings (which are readily available in today's market) and good work practices to comply with the regulation. Compliant coatings may be more expensive than the conventional coatings they replace. In addition, demonstrating compliance to the appropriate enforcement official will involve more paperwork and labor to complete that paperwork. Many of the larger (i.e., Tier I) shipyards have tracking systems currently in place that will only have to be modified slightly or not at all. Shipyards located in states such as California and Louisiana that have been complying with similar requirements for several years should have minimal cost impacts as well.

In developing cost impacts of the regulation, EPA used model plants to analyze separate costs. Table 9-1 summarizes the costs for each size and type of model shipyard. These results represent the original shipyard costs to comply and were calculated as the difference between before (baseline) and after NESHPA costs. The average shipyard was projected to spend \$58,000/yr to comply with the regulation.

MATERIAL (COATING) COSTS

The net cost associated with switching to lower-VOHAP coatings was assumed to be the

sum of the additional cost of compliant coatings, the savings associated with higher solids content, the savings associated with decreased thinner usage. Costs were developed for "baseline" (all coatings being used currently) and for those coatings meeting the VOHAP limits in Table 2-1. The difference between the use of baseline and compliant coatings is presented in Table 9-1.

For the impact analysis, it was assumed that the total build of a lower-VOHAP coating (the dry film thickness) would equal that of the conventional counterpart, i.e., the total amount of solids (nonvolatiles) applied would remain constant. Because lower-VOHAP solvent-borne coatings contain more nonvolatiles (solids), the total volume of paint needed to coat a given area is less than for the conventional, lower-solids coatings (assuming constant transfer efficiency). The lower-VOHAP coatings, however, are more expensive on a dollar-per-unit volume basis.

In evaluating the use of lower-VOHAP solvent-borne coatings, it was assumed that lower-VOHAP coatings require the same amount of thinning solvent, liter for liter, as conventional coatings. Because fewer liters of lower-VOHAP coatings are required (as a result of their higher solids content), thinner use would decrease. A decrease in the amount of thinner used results in VOHAP emission reductions and a cost savings.

RECORDKEEPING AND REPORTING

Recordkeeping and reporting (R&R) practices are established by permit conditions, and in some instances, the requirements of section 313 of the Superfund Amendments and Reauthorization Act of 1986 (SARA 313). For that reason, the cost of recordkeeping to comply with permit and SARA 313 requirements are considered as the baseline from which to measure the incremental cost of this regulation. Complying with the NESHAP will require more involved recordkeeping practices than those necessary at the baseline.

Recordkeeping and reporting costs are a function of the equipment and labor required. A computer (and software) will probably be used. Labor requirements include training, data recording and analysis, and report preparation.

Most large and medium shipyards already maintain records to comply with State or local permits as well as SARA 313 requirements. It has been assumed that the operations at these facilities are complex enough and the facilities sophisticated enough that they already use a computerized system for R&R.

The current reporting requirements for large and medium yards (at baseline) are assumed to consist of an annual SARA 313 report and an annual report of VOC emissions. To prepare these reports, it is assumed that the facilities have adapted their central inventory tracking system to record the quantity of each paint and thinner used at the yard. It is also assumed that this information is coupled with a data base in which the HAP and VOC contents of each paint and thinner are stored. The total technical labor devoted to recordkeeping and reporting for large and medium yards prior to promulgation of the NESHAP is estimated to be

159 hours per years (hr/yr). To comply with the NESHAP it was assumed that no additional equipment is required for any affected facility.

Most of the additional costs associated with the NESHAP will result from the higher costs of compliant coatings compared to those being used currently. The recordkeeping and reporting burden only accounts for approximately 25 percent of the total costs.

TOTAL COSTS

Table 9-1 summarizes the total industry annual costs resulting from implementing the NESHAP, which were estimated to be about \$2.0 million. The average facility cost to comply with the final regulation is estimated to be \$58,000/yr. These estimates presume that all incremental environmental costs are imposed as a consequence of implementing MACT. In fact, those shipyards located in nonattainment areas (which is thought to include most of the 35) will likely be required to bear essentially the same costs to meet State requirements for limiting VOC emissions as the States impose rules based on EPA's recommendations on best available control measures (BACM) for control of VOC.

PERMITTING FEES

As discussed in Chapter 8, you may be required by the regulation to obtain an operating permit under title V of the CAA. If so, you will be charged a permit or emission fee by your State or local permitting authority when you apply for your title V permit. This fee will vary from State to State. For more information on title V operating permit fees, contact your State or local permitting authority or the EPA Regional Office for your State.

TABLE 9-1. ESTIMATED COSTS FOR COMPLYING WITH NESHAP, \$/YR^a

	Model Yards			
	Construction		Repair	
	Medium	Large	Medium	Large
Average total coating usage, L/yr (gal/yr)	158,726 (41,931)	510,560 (134,876)	131,228 (34,667)	453,718 (119,860)
Average total solvent usage, L/yr (gal/yr)	43,532 (11,500)	162,132 (42,831)	20,562 (5,432)	23,091 (6,100)
Additional (net) material - coating and solvent costs, \$/yr	40,217	124,783	12,306	43,448
Recordkeeping and reporting costs (above baseline level), \$/yr	9,825	32,627	9,825	32,627
Total additional costs, \$/yr	50,042	157,410	22,131	76,075
Estimated number of affected facilities	8	6	17	4
Total costs, \$/yr	400,336	944,460	376,227	304,300
Total industry costs = \$2,025,323				
Average facility costs = \$57,866				

^aBased on 1992 dollars.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 10

WHERE CAN I GO FOR MORE INFORMATION AND ASSISTANCE?

TELEPHONE CONTACTS

For more information on how to comply with this regulation, please call:

- ▣ your State or local air pollution control agency;
- ▣ your local, regional, or national trade association;
- ▣ your State Small Business Assistance Program; or
- ▣ your State Small Business Ombudsman.

For information on your State Small Business Assistance Program contacts, call EPA's Control Technology Center Hotline at (919) 541-0800.

Also, for more information, you may call the EPA Regional Office that serves your State or territory. Table 10-1 lists the telephone numbers of the 10 EPA Regional Offices and the States and territories that they serve.

EPA's ELECTRONIC BULLETIN BOARD SYSTEM

The EPA operates an electronic bulletin board, the *Technology Transfer Network* or "TTN," which contains copies of preambles and regulations, background information documents, policy memoranda, and other guidance materials. You may access the TTN via modem by dialing (919) 541-5742 or the Internet at <http://ttnwww.rtpnc.epa.gov>. Assistance with the TTN is available by calling (919) 541-5384.

OTHER EPA GUIDANCE MATERIALS

In developing this regulation, EPA has prepared other materials that provide more information on the technical aspects of the regulation. These include:

- *Surface Coating Operations at Shipbuilding and Ship Repair Facilities--Background Information for Proposed Standards (Volume I)*.

EPA-453/R-93-030a. February 1994.

- *National Emission Standards for Hazardous Air Pollutants for Shipbuilding and Ship Repair Facilities (Surface Coating)--Background Information for Final Standards*.

EPA-453/R-95-016b. November 1995.

Copies of these reports are available through EPA's Library Services Office (MD-35), U. S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, (919) 541-2777; on EPA's TTN; or, for a fee, from the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22161, (703) 487-4600.

Also, EPA has developed an informational pamphlet which has summarized much of the general information contained in this guidebook. A copy of the pamphlet may be obtained by contacting Dr. Mohamed Serageldin of EPA's Emission Standards Division, Research Triangle Park, North Carolina. His telephone, fax, and email are (919) 541-2379, (919) 541-5689, and serageldin.mohamed@epamail.epa.gov, respectively. You may also contact

Ms. Suzanne Childress of EPA's Office of Enforcement and Compliance Assurance (OECA), Mail Station 2223-A, 401 M Street, S.W., Washington, D.C. 20460. Her telephone and fax numbers are (202) 564-7018 and (202) 564-7018, respectively.

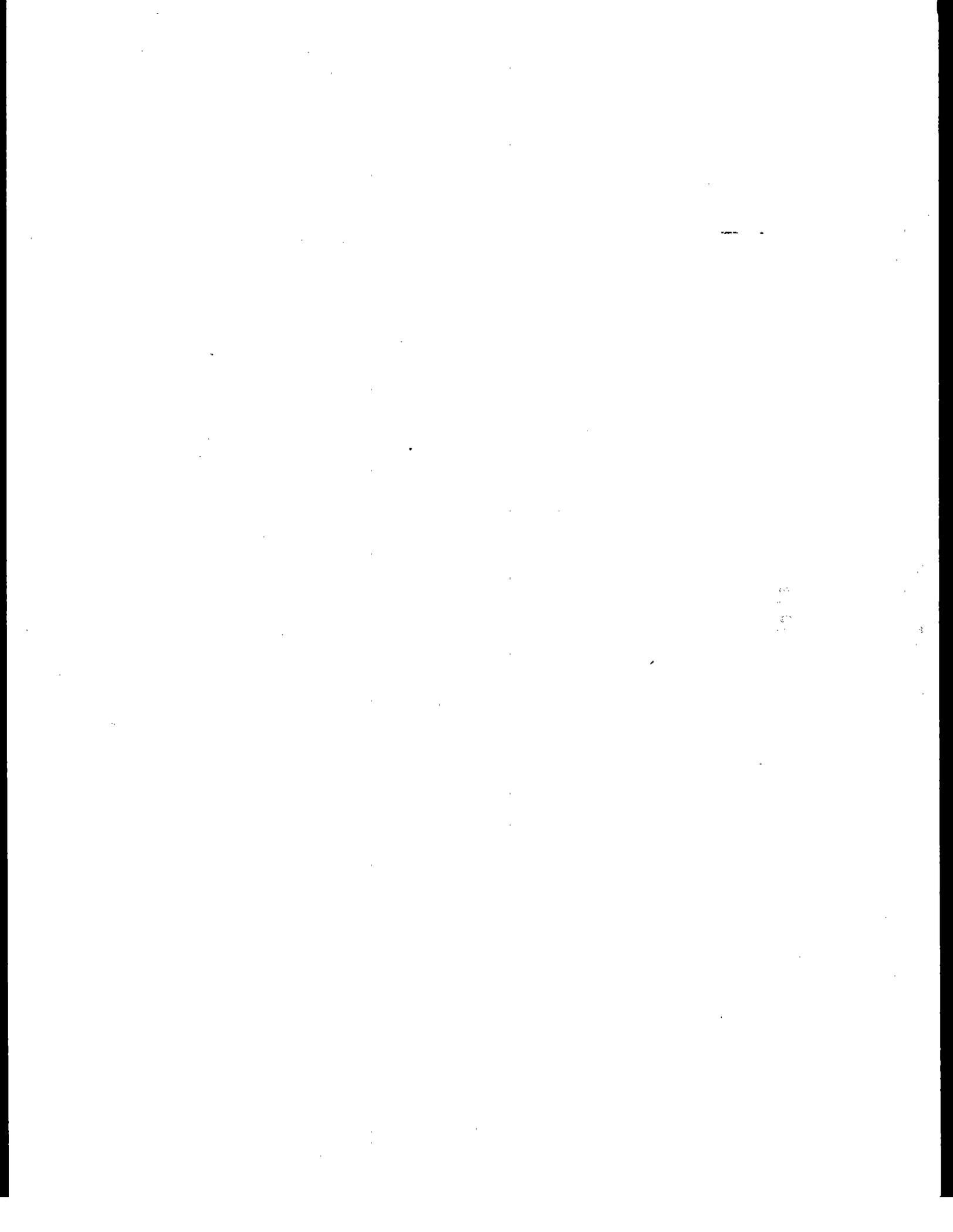
TABLE 10-1. EPA REGIONAL OFFICE CONTACTS

Region	Telephone #	States covered	Address
1	(617) 565-3728	CT, ME, MA, NH, RI & VT	Director, Air, Pesticides and Toxics Division J.F.K. Federal Building Boston, MA 02203-2211
2	(212) 637-4023	NJ, NY, Puerto Rico & Virgin Islands	Director, Air and Waste Management Division 290 Broadway 21st Floor New York, NY 10007-1866
3	(215) 597-3237	DE, MD, PA, VA, WV & District of Columbia	Director, Air, Radiation and Toxics Division 841 Chestnut Street Philadelphia, PA 19107
4	(404) 347-2864	AL, FL, GA, KY, MS, NC, SC & TN	Director, Air, Pesticides and Toxics Management Division 345 Courtland Street, NE Atlanta, GA 30365
5	(312) 886-6793	IL, IN, MI, WI, MN & OH	Director, Air and Radiation Division 77 West Jackson Blvd. Chicago, IL 60604-3507
6	(214) 665-7225	AR, LA, NM, OK & TX	Director, Air, Pesticides and Toxics 1445 Ross Avenue Dallas, TX 75202-2733
7	(913) 551-7556	IA, KS, MO & NE	Director, Air RCRA and Toxics Division 726 Minnesota Avenue Kansas City, KS 66101
8	(303) 293-1886	CO, MT, ND, SD, UT & WY	Director, Air and Toxics Division 999 18th Street 1 Denver Place, Suite 500 Denver, CO 80202-2405
9	(415) 744-1143	AZ, CA, HI, NV, American Samoa & Guam	Director, Air and Toxics Division 75 Hawthorne Street San Francisco, CA 94105
10	(206) 553-1949	AK, ID, WA & OR	Director, Air and Toxics Division 1200 Sixth Avenue Seattle, WA 98101

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

**FEDERAL REGISTER NOTICE:
FINAL RULE AND DIRECT FINAL RULE**



Environmental Protection Agency,
Region 4, Air Programs Branch, 345
Courtland Street, Atlanta, Georgia
30365.

Mississippi Department of
Environmental Quality, Bureau of
Pollution Control, Air Quality
Division, P.O. Box 10385, Jackson,
Mississippi 39289-0385.

Effective immediately, all requests,
applications, reports and other
correspondence required pursuant to
the newly delegated standards should
not be submitted to the Region 4 office,
but should instead be submitted to the
following address: Office of Pollution
Control, Mississippi Department of
Environmental Quality, P.O. Box 10385,
Jackson, Mississippi 39289-0385.

FOR FURTHER INFORMATION CONTACT:
Scott M. Martin, Regulatory Planning
and Development Section, Air Programs
Branch, United States Environmental
Protection Agency, Region 4, 345
Courtland Street N.E., Atlanta, Georgia
30365, (404) 347-3555, x4216.

SUPPLEMENTARY INFORMATION: Section
301, in conjunction with Sections 110
and 111(c)(1) of the Clean Air Act as
amended November 15, 1990,
authorizes EPA to delegate authority to
implement and enforce the standards set
out in 40 CFR Part 60, (NSPS).

On November 10, 1981, EPA initially
delegated the authority for
implementation and enforcement of the
NSPS programs to the state of
Mississippi. On September 29, 1995,
Mississippi requested a delegation of
authority for implementation and
enforcement of the following NSPS
category found in 40 CFR Part 60.

Automobile and Light Duty Truck Surface
Coating Operations, as amended by 59 FR
51383 (October 11, 1994), as specified in 40
CFR 60, Subpart MM.

After a thorough review of the
request, the Regional Administrator
determined that such a delegation was
appropriate for this source category with
the conditions set forth in the original
delegation letter of November 30, 1981.
Mississippi sources subject to the
requirements of this subpart will now be
under the jurisdiction of Mississippi.

Since review of the pertinent
Mississippi laws, rules, and regulations
showed them to be adequate for the
implementation and enforcement of the
aforementioned category of NSPS, the
EPA hereby notifies the public that it
has delegated the authority for the
source category listed above on October
30, 1995. The Office of Management and
Budget has exempted this rule from the
requirements of section 6 of Executive
Order 12866.

Authority: This notice is issued under the
authority of sections 101, 111, and 301 of the
Clean Air Act, as Amended (42 U.S.C. 7401,
7411, and 7601).

Dated: November 22, 1995.
Patrick M. Tobin,
Acting Regional Administrator.
[FR Doc. 95-30553 Filed 12-14-95; 8:45 am]
BILLING CODE 6560-50-P

40 CFR Part 63

[AD-FRL-5335-3]

RIN 2060-AD98

National Emission Standards for Hazardous Air Pollutants for Shipbuilding and Ship Repair (Surface Coating) Operations

AGENCY: Environmental Protection
Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates
national emission standards for
hazardous air pollutants (NESHAP)
under Section 112 of the Clean Air Act
as amended in 1990 (CAA) for
shipbuilding and ship repair (surface
coating) operations. The NESHAP
requires existing and new major sources
to control emissions using the
maximum achievable control
technology (MACT) to control
hazardous air pollutants (HAP).

The MACT described herein is based
on maximum HAP limits for various
categories of marine coatings. Surface
coating operations at shipyards are the
focus of the NESHAP, and a variety of
HAP are used as solvents in marine
coatings. The HAP emitted by the
facilities covered by this final rule
include xylene, toluene, ethylbenzene,
methyl ethyl ketone, methyl isobutyl
ketone, ethylene glycol, and glycol
ethers. All of these pollutants can cause
reversible or irreversible toxic effects
following exposure. The potential toxic
effects include irritation of the eye,
nose, throat, and skin and damage to the
blood cells, heart, liver, and kidneys.
The final rule is estimated to reduce
baseline emissions of HAP by 24
percent or 318.5 megagrams per year
(Mg/yr) (350 tons per year (tpy)).

The emissions reductions achieved by
these standards, combined with the
emissions reductions achieved by
similar standards, will achieve the
primary goal of the CAA, which is to
"enhance the quality of the Nation's air
resources so as to promote the public
health and welfare and productive
capacity of its population". The intent
of this final regulation is to protect the
public health by requiring the maximum

degree of reduction in emissions of
volatile organic hazardous air pollutants
(VOHAP) from new and existing
sources, taking into consideration the
cost of achieving such emission
reduction, any nonair quality, health
and environmental impacts, and energy
requirements.

DATES: The effective date is December
15, 1995. Incorporation by reference of
certain publications listed in the
regulations is approved by the director
of the Federal Register as of December
15, 1995.

ADDRESSES: *Background Information
Document.* The background information
document (BID) for the promulgated
standards may be obtained from the U.S.
Department of Commerce, National
Technical Information Service (NTIS),
Springfield, Virginia, 22161, telephone
number (703) 487-4650. Please refer to
"National Emission Standards for
Hazardous Air Pollutants for
Shipbuilding and Ship Repair Facilities
(Surface Coating)—Background
Information Document for Final
Standards," EPA-453/R-95-016b. The
BID contains (1) a summary of the
changes made to the standards since
proposal and (2) a summary of all the
public comments made on the proposed
standards and the Administrator's
response to the comments.

Electronic versions of the
promulgation BID as well as this final
rule are available for download from the
EPA's Technology Transfer Network
(TTN); a network of electronic bulletin
boards developed and operated by the
Office of Air Quality Planning and
Standards. The TTN provides
information and technology exchange in
various areas of air pollution control.
The service is free, except for the cost
of a phone call. Dial (919) 541-5742 for
data transfer of up to a 14,400 bits per
second. If more information on TTN is
needed, contact the systems operator at
(919) 541-5384.

Docket. Docket No. A-92-11,
containing supporting information used
in developing the promulgated
standards, is available for public
inspection and copying from 8 a.m. to
5:30 p.m., Monday through Friday, at
the EPA's Air and Radiation Docket and
Information Center, Waterside Mall,
Room M-1500, Ground Floor, 401 M
Street SW, Washington, DC 20460. A
reasonable fee may be charged for
copying.

FOR FURTHER INFORMATION CONTACT: Dr.
Mohamed Serageldin at (919) 541-2379,
Emission Standards Division (MD-13),
U.S. Environmental Protection Agency,
Research Triangle Park, North Carolina
27711.

SUPPLEMENTARY INFORMATION: Under Section 307(b)(1) of the CAA, judicial review of NESHAP is available only by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of publication of this rule. Under Section 307(b)(2) of the CAA, the requirements that are the subject of this action may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

The information presented in this preamble is organized as follows:

- I. Regulatory Background and Purpose
- II. The Standards
- III. Summary of Impacts
- IV. Significant Changes to the Proposed Standards
 - A. Public Participation
 - B. Comments on the Proposed Standards
 - C. Significant Comments/Changes
- V. Control Techniques Guidelines (CTG)
- VI. Administrative Requirements
 - A. Docket
 - B. Paperwork Reduction Act
 - C. Executive Order 12866
 - D. Executive Order 12875
 - E. Regulatory Flexibility Act
 - F. Unfunded Mandates Act of 1995

I. Regulatory Background and Purpose

Section 112 of the CAA requires the EPA to evaluate and control HAP emissions. The control of HAP is to be achieved through promulgation of emission standards under Sections 112(d) and (f), and of work practice standards under Section 112(h) where appropriate, for categories of sources that emit HAP. Pursuant to Section 112(c) of the CAA, the EPA published in the Federal Register the initial list of source categories that emit HAP on July 16, 1992 (57 FR. 31576). This list includes major and area sources of HAP for which the EPA intends to issue regulations between November 1992 and November 2000.

The CAA was created, in part, "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and productive capacity of its population" 42 U.S.C. § 7401(b). This final regulation will protect the public health by reducing emissions of HAP from surface coating operations at shipbuilding and ship repair facilities (shipyards).

Many shipyards are major sources of HAP emissions, emitting over 23 Mg/yr (25 tpy) of organic HAP, including toluene, xylene, ethylbenzene, methanol, methyl ethyl ketone, methyl isobutyl ketone, ethylene glycol and glycol ethers. All of these pollutants can cause reversible or irreversible toxic effects following exposure. The potential toxic effects include irritation of the eyes, nose, throat, and skin,

irritation and damage to the blood cells, heart, liver, and kidneys. These adverse health effects are associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect human variability, such as genetics, age, health status (e.g., the presence of pre-existing disease), and lifestyle.

The final standards will reduce VOHAP emissions from shipyard surface coating operations by 318.5 Mg/yr (350 tpy) from a baseline level of 1,362 Mg/yr (1,497 tpy). No significant economic impacts are associated with the final standards. No firms or facilities are at risk of closure as a result of the final standards, and there will not be a significant economic impact on a substantial number of small entities.

II. The Standards

The final rule is applicable to all existing and new shipbuilding and repair facilities that are major sources of HAP or are located at plant sites that are major sources. Major source facilities that are subject to this rule must not apply any marine coating with a VOHAP content in excess of the applicable limit and must implement the work practices required in the rule. Section 112(a) of the CAA defines major source as a source, or group of sources, located within a contiguous area and under common control that emits or has the potential to emit, considering controls, 9.1 Mg/yr (10 tpy) or more of any individual HAP or 22.7 Mg/yr (25 tpy) or more of any combination of HAP. Area sources are stationary sources that do not qualify as "major." The term "affected source" as used in this rule means the total of all HAP emission points at each shipbuilding and ship repair facility that is subject to the rule. "Potential to emit" is defined in the Section 112 General Provisions (40 CFR 63.2) as "the maximum capacity of a stationary source to emit a pollutant under its physical or operational design."

To determine the applicability of this rule to facilities that are within a contiguous area of other HAP-emitting emission sources that are not part of the source category covered by this rule, the owner or operator must determine whether the plant site as a whole is a major source. A formal HAP emissions inventory must be used to determine if total HAP emissions from all HAP emission sources at the plant site meets the definition of a major source. The actual emissions of HAP from most

shipyards are substantially less than the major source cutoff limits [i.e., 9.1 Mg/yr (10 tpy) of any single HAP, or 22.8 Mg/yr (25 tpy) of all HAP combined]. If the source becomes a synthetic minor source through accepting enforceable restrictions that ensure potential and actual HAP emissions will be below the major source cutoffs, the NESHAP does not apply. See promulgation BID Section 2.4 for additional details and the associated recordkeeping provisions (see ADDRESSES section of this preamble).

Existing major sources may switch to area source status by obtaining and complying with a federally enforceable limit on their potential to emit prior to the "compliance date" of the regulation. The "compliance date" for this regulation is defined as December 16, 1996. New major sources are required to comply with the NESHAP requirements upon start up or the promulgation date, whichever is later. Existing major sources may switch to area source status by obtaining and complying with a federally enforceable limit on their potential to emit that makes the facility an area source prior to the "compliance date" of the regulation. The compliance date for this regulation is December 16, 1996. A facility that has not obtained federally enforceable limits on its potential to emit by the compliance date, and that has not complied with the NESHAP requirements, will be in violation of the NESHAP. New major sources are required to comply with the NESHAP requirements upon start-up or the promulgation date, whichever is later. All sources that are major sources for HAP on the compliance date are required to comply permanently with the NESHAP to ensure that the maximum achievable reductions in toxic emissions are achieved and maintained. All major sources for HAP on the "compliance date" are required to comply permanently with the NESHAP to ensure that the maximum achievable reductions in toxic emissions are achieved and maintained.

The final standards impose limits on the VOHAP content of 23 types of coatings used at shipyards. Compliance with the VOHAP limits must be demonstrated on a monthly basis. The promulgated standards include four compliance options to allow owners or operators flexibility in demonstrating compliance with the VOHAP limits. The final standards also allow for an alternative means of compliance other than using compliant coatings, if approved by the Administrator. The Administrator shall approve the alternative means of limiting emissions if, in the Administrator's judgment,

(after control) emissions of VOHAP per volume solids applied will be no greater than those from the use of coatings that comply with the applicable VOHAP limits.

The final standards also require that all handling and transfer of VOHAP containing materials to and from containers, tanks, vats, vessels, and piping systems be conducted in a manner that minimizes spills and other factors leading to emissions. (This requirement includes hand- or brush-application of coatings.) In addition, containers of thinning solvent or waste that hold any VOHAP must be normally closed (to minimize evaporation) unless materials are being added to or removed from them.

Owners or operators of existing shipbuilding and ship repair (surface coating) operations subject to the requirements promulgated under Section 112(d) of the CAA are required to comply with the standards within 1 year from December 15, 1995. Owners or operators of new shipbuilding and ship repair (surface coating) operations with initial startup before or after December 15, 1996 are required to comply with all requirements of the standards upon startup. The first requirement is the initial notification due 6 months before start up.

III. Summary of Impacts

These standards will reduce nationwide emissions of HAP from shipbuilding and ship repair (surface coating) operations by approximately 318.5 Mg (350 tons) in 1997 compared to the emissions that would result in the absence of the standards. These standards will also reduce volatile organic compounds (VOC) emissions from those same shipbuilding and ship repair (surface coating) operations by approximately 837 Mg (920 tons) in 1997 compared to the emissions that would result in the absence of the standards. No significant adverse secondary air, water, solid waste, or energy impacts are anticipated from the promulgation of these standards.

Implementation of this regulation is expected to result in nationwide annualized costs for existing shipyards of about \$2 million beyond baseline. This estimation is based on an analysis of the application of VOHAP limits on marine coatings at all existing major source facilities not currently controlled to the level of the standards.

The economic impact analysis conducted prior to proposal showed that the economic impacts from the proposed standard would be insignificant. An update of the economic impact analysis (due to

revisions to the final rule) indicates that the original conclusion still holds true. Implementation of the rule is not expected to cause significant economic impacts for the 35 major source facilities in this industry.

IV. Significant Changes to the Proposed Standards

A. Public Participation

The standards were proposed and the preamble was published in the Federal Register on December 6, 1994 (59 FR 62681). The preamble to the proposed standards discussed the availability of the regulatory text and proposal BID, which described the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal, and copies of the regulatory text and BID were distributed to interested parties. Electronic versions of the preamble, regulation, and BID were made available to interested parties via the TTN (see SUPPLEMENTARY INFORMATION section of this preamble).

To provide interested persons the opportunity for oral presentation of data, views, or arguments concerning the proposed standards, a public hearing was held on January 18, 1995 in Research Triangle Park, North Carolina. The public comment period was from December 6, 1994 to February 17, 1995. In all, 22 comment letters were received (including one duplicate). The comments have been carefully considered, and changes have been made to the proposed standards when determined by the Administrator to be appropriate.

B. Comments on the Proposed Standards

Comments on the proposed standards were received from 22 commenters; the commenters were comprised mainly of States, shipyard owners or operators, marine coating manufacturers, environmental groups, and trade associations. A detailed discussion of these comments and responses can be found in the promulgation BID, which is referred to in the ADDRESSES section of this preamble. The summary of comments and responses in the BID serve as the basis for the revisions that have been made to the standards between proposal and promulgation. (Some additional changes have been made to clarify the standards and improve their organization.) Most of the comment letters contained multiple comments. For summary purposes, the comments were grouped into several topic areas.

C. Significant Comments/Changes

Several changes have been made since the proposal of these standards. The majority of the changes have been made to clarify portions of the rule that were unclear to the commenters. A summary of the major comments and changes is presented below.

(1) Applicability to Coating Manufacturers

Several commenters asked the EPA to regulate the manufacture and sale of marine coatings rather than the end users (shipyards). While this approach has some obvious advantages, the EPA does not have authority to regulate (with this NESHAP) the manufacture and sale of coatings under Section 112(d). The EPA plans to address requirements for coating manufacturers under Section 183(e) of the CAA by March 1997 through either a national rule or a control techniques guidelines (CTG).

(2) Number of Major Sources/MACT Floor

Some commenters thought the EPA underestimated the number of major source shipyards, and thereby erred in the MACT floor determination. Although the EPA based the proposed number of major sources on the best available information at the time, there has been recent additional information provided by the Louisiana Department of Environmental Quality (Louisiana having more shipyards than any other State) showing there are four other shipyards with HAP emissions greater than the major source cutoffs. At the same time, however, the same additional information indicated that one of the shipyards identified in the original list of 25 has HAP emissions well below the major source cutoffs (based on recent operating permit data).

This information along with other State permit data on annual paint usage and VOC/VOHAP emissions indicates that there are 35 major sources, instead of the estimated 25 discussed in the proposal preamble. Even though 10 additional major sources have been identified, the MACT floor would not change. At proposal, the EPA based the MACT floor on the control achieved by the best-performing 5 sources, as required by Section 112 (d)(3) of the CAA when there are less than 30 sources in the category. If there are 35 sources in the category, the MACT floor would be based on the best-performing 4.2 sources (12 percent of the 35) as required by Section 112 (d)(3). Under both situations, the MACT floor is the same.

Another point to be considered is that even if there are 45 major source

shipyards, the best 12 percent is still represented by the best $0.12 \times 45 = 5.4$ or best 5 yards. Both the MACT floor and the associated marine coating VOHAP limits would be identical. Since the NESHAP proposal date, the Navy has adopted VOC limits identical to (or more stringent than) the 1992 California limits for all Naval shipyards and Navy-related work. Since at least two of the Naval shipyards qualify as major sources, if the MACT floor were to be recalculated today, the limits would be identical to the proposed (and promulgated) limits, regardless of the approach used to determine the mean or median level of control. The Louisiana limits, which are less stringent for the major use categories of coatings, would not enter into any of the floor calculations.

Recent indications from the Navy and other industry representatives reveal that fewer affected sources exist today because of base closings and consolidation efforts. The original estimation of 25 major source shipyards was based on annual paint and solvent usage, type of work conducted (new construction versus repair), number of employees, and type (size) of vessels serviced. The (weighted) average HAP concentration of all marine coatings is an integral part of emissions estimates and determining if a shipyard qualifies as a major source facility. Other HAP-emitting processes at most shipyards such as welding, metal forming/cutting, and abrasive blasting exist, but the vast majority of HAP emissions come from organic solvents used in marine paints and solvents used for thinning and cleaning.

(3) Elimination of Compliance Option 1

Proposed compliance option 1 required that each and every container of coating be tested or certified prior to application. Based on comments pertaining to its impracticality and the unrealistic costs associated with testing/certifying every container of coating, compliance option 1 was eliminated from the final rule. The flow diagram (included as Figure 1 in the regulation) summarizing the various compliance options was similarly revised and simplified.

(4) Training Requirements

In the proposed rule, the EPA required training and certification for all personnel involved with paints and/or solvents. There were several comments regarding the inappropriate amount and level of detail involved with the training and annual personnel certifications. Some commenters indicated that there was a high turnover rate involving

personnel, and the proposed training requirements would impose a significant impact for very little reduction in HAP emissions. The EPA has determined that it is appropriate to leave the details of training to the individual shipyards who can best define the real needs of their specific locations and applications. Affected sources are responsible for complying with the standards, and it is in their own best interest to ensure that workers are aware of the associated requirements. Therefore, all training requirements related to painting/thinning, handling/transfer of VOHAP-containing materials, and certification of all personnel involved with surface coating operations have been eliminated from the final rule.

(5) Definition of Pleasure Craft

A definition of pleasure craft has been added to ensure that the standards apply only to those coatings (and solvents) used on commercial and military vessels. Some commenters were concerned that, as proposed, the rule could be interpreted to regulate coatings used on pleasure crafts. Other commenters suggested that pleasure crafts should be included. The EPA did not intend to include coatings used on pleasure crafts in these standards. Such coatings (applications) will be considered under the development of the Boat Manufacturing NESHAP.

(6) Definition of Affected Source

The definition of affected source was modified to ensure that the requirements of the standards apply only to those sources (major source shipyards) with a minimum annual marine coating usage of 1,000 L (264.2 gal). The primary focus of this NESHAP is surface coating operations and this clarification will minimize/eliminate the impact on shipyards with minimal surface coating emissions.

(7) Reporting and Notification Changes

Changes have also been made to the notification and reporting schedules. The initial notification deadline has been extended from 120 to 180 days. The frequency of reporting has also been reduced from the proposed quarterly requirement to semiannual. This change was made to allow shipyards to be consistent with current/upcoming Title V permit requirements. The first compliance certification report is due 6 months after the compliance date.

(8) Exemptions

Several commenters recommended that the EPA adopt some of the exemptions provided in various State

regulations. Since the MACT floor was based on three shipyards located in California and those yards have exemptions similar to those requested, the EPA determined there would be no significant impact and adopted the following exemptions:

a. Any individual coating with annual usage less than 200 liters (52.8 gallons) is exempt from the requirements of the standards (i.e., the applicable VOHAP limit). The total amount of all coatings exempted in any given year cannot exceed 1,000 liters (264.2 gallons); and

b. Any coating applied via nonrefillable hand-held aerosol cans is exempt from the requirements of the standards.

(9) Revision of Equations

The equations used with compliance options 2 and 3 (proposed options 3 and 4) have been changed so that calculations are based on volume solids. The revised equations require the VOHAP limits based on volume solids be used in place of the VOHAP limits based on volume of coating less water and non-HAP exempt solvents. This change was made to provide a uniform basis for calculating emission reductions (i.e., associated with thinning additions or add-on control devices).

(10) Weather-related VOHAP limits

The proposal preamble requested comments on how to handle thinning issues for various climatic conditions. The EPA reviewed the comments and collected additional information on both cold and hot/humid-weather thinning practices. As a result of this information, cold-weather VOHAP limits are included as part of the final rule. If the temperature is below 4.5°C (40°F) at the time the coating is applied and the source needs to thin that coating beyond the applicable VOHAP limit, the date, time, and temperature (including units) must be documented, and the applicable cold-weather VOHAP limit may be used. The cold-weather VOHAP limits on a solids basis were increased equivalently, but the actual values vary for each coating category. The cold-weather VOHAP limits are applicable only to as-supplied coatings that are greater than 40 percent solids by volume.

With regards to hot/humid weather conditions, the data and responses to Section 114 information requests sent by EPA to nine shipyards and other information received did not provide a basis for including a humid weather thinning allowance. Respondents identified meteorological conditions under which coatings must be thinned

or not applied at all. Only one shipyard, which uses large quantities of water-based preconstruction primer, maintained that a humid weather thinning allowance should be adopted. However, the shipyard did not explain how hydrocarbon-based thinners would relate to its water-based operation.

Hot and humid weather conditions appear to inhibit coating operations work less frequently than does cold weather. The different responses can best be understood as they relate to the specifications for thinning under different climatic conditions, which are dependent on paint type and manufacturer. Some coating formulations lose at high temperature more organic solvent than others which could lead to thickening (increase in viscosity) of the paint. This occurs where the rate of application is low and paint containers remain uncovered. Nevertheless, beginning in September 1994, shipyards performing work for the Navy in humid climates such as Louisiana, Florida, and Virginia are required by the Navy to use paints with VOHAP contents levels that are in compliance with the limits in the NESHAP, without provision for additional thinning. There is no reason that VOHAP limits that are achievable for paints used by the Navy cannot also be achieved for paints used by commercial shipyards located in humid climates and that, therefore, a thinning allowance for hot/humid weather conditions is not necessary. If conditions necessitate application of small amount of noncompliant coatings, the regulation provides a low usage exemption of 1,000 liters of coating per year.

D. Minor Changes

This section contains a list of several of the minor changes to the final rule. A discussion of these changes can be found in the promulgation BID. (See ADDRESSES section of this preamble.)

(1) Revisions to definitions and phrasing have been made to clarify the regulation.

(2) Based on comments received and on changes to the notification and recordkeeping and reporting requirements, those sections of the standard have been reorganized and overlapping requirements clarified or eliminated.

(3) Table 2, which contains the VOHAP limits for the various coating categories, has been simplified to contain only one set of units (metric). The conversion factor for English units is included as a footnote to the table.

V. Control Techniques Guidelines (CTG)

Section 183(b)(4) of the CAA requires the Administrator to issue a CTG document for limiting VOC and particulate matter emissions from coatings (paints) and solvents used in the shipbuilding and ship repair industry. Since VOHAP emissions from this industry are generally a subset of VOC emissions, the control techniques evaluated for the MACT standard are also applicable to VOC emissions. Therefore, the EPA has developed the CTG concurrently with the NESHAP and will be issuing final guidance under a separate notice. As explained in the proposal notice (AD-FR-), no CTG is being issued for particulate matter emissions.

VI. Administrative Requirements

A. Docket

The Docket is an organized and complete file of all the information considered by the EPA in the development of this rulemaking. The Docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards and the EPA responses to significant comments, the contents of the Docket will serve as the record in case of judicial review [see 42 U.S.C. 7607(d)(7)(A)].

B. Paperwork Reduction Act

The Office of Management and Budget (OMB) is currently reviewing the information collection request (ICR) requirements contained in this rule under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2060-0330 and EPA ICR number 1712.2.

The information required to be collected by this rule is needed as part of the overall compliance and enforcement program. It is necessary to identify the regulated entities who are subject to the rule and to ensure their compliance with the rule. The recordkeeping and reporting requirements are mandatory and are being established under authority of Section 114 of the Act. All information submitted to the EPA for which a claim of confidentiality is made will be safeguarded according to the EPA policies set forth in Title 40, Chapter 1, Part 2, Subpart B—Confidentiality of

Information (see 40 CFR part 2; 41 FR 36902, September 1, 1976; amended by 43 FR 39999, September 8, 1978; 43 FR 42251, September 28, 1978; 44 FR 17674, March 23, 1979).

The total annual reporting and recordkeeping burden for this collection averaged over the first 3 years is estimated to be \$26,218 per year. The average burden, per respondent, is 772 hours per year. This estimate includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. The total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. The rule requires an initial one-time notification from each respondent and subsequent notification every 6 months to indicate their compliance status. At the time of the initial notification each respondent would also be required to submit an implementation plan that describes compliance procedures. A respondent would also be required to keep necessary records of data to determine compliance with the standards in the regulation. The data would be recorded monthly. A report would need to be submitted semi-annually by each respondent. There would be an estimated 35 respondents to the proposed collection requirements.

Send comments on the EPA's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, OPPE

Regulatory Information Division; U. S. Environmental Protection Agency (2136): 401 M Street SW.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW.; Washington, DC 20503; marked "Attention: Desk Officer for EPA." Include the OMB number and the EPA ICR number in any correspondence.

C. Executive Order 12866: Administrative Designation and Regulatory Analysis

Under Executive Order 12866 [58 FR 51735 (October 4, 1993)], the EPA is required to judge whether a regulation is "significant" and therefore subject to OMB review and the requirements of this Executive Order to prepare a regulatory impact analysis (RIA). The Order defines "significant regulatory action" as one that is likely to result in a rule that may (1) have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is not a "significant regulatory action" and is therefore not subject to OMB review.

D. Executive Order 12875

To reduce the burden of federal regulations on States and small governments, the President issued Executive Order 12875 on October 26, 1993, entitled Enhancing the Intergovernmental Partnership. In particular, this executive order is designed to require agencies to assess the effects of regulations that are not required by statute and that create mandates upon State, local, or tribal governments. Two methods exist for complying with the requirements of the executive order: (1) Assure that funds necessary to pay direct costs of compliance with a regulation are provided, or (2) provide OMB a description of the communications and consultations with State/local/tribal governments, the nature of their

concerns, any written submission from them, and the EPA's position supporting the need to issue the regulation.

The EPA has always been concerned about the effect of the cost of regulations on small entities: the EPA has consulted with and sought input from public entities to explain costs and burdens they may incur.

The EPA advised interested parties on July 16, 1992 (57 FR 21592), of the categories considered as major and area sources of HAP, and shipbuilding and ship repair (surface coating) industry was listed as a category of both major and area sources. The EPA made significant effort to hear from all levels of interest and all segments of the shipbuilding and ship repair industry. To facilitate comments and input, the EPA conducted comprehensive mailouts of draft and proposal package materials in 1993 and 1994 to shipyards, Department of the Navy (Naval Sea Systems Command), marine coating manufacturers, and State and local government officials. All were given opportunity to comment on the presented regulatory development activities of the standard. Throughout the regulatory development process and more specifically in consultation meetings, industry representatives from commercial/private shipyards, the U.S. Navy, and various trade associations were given an opportunity to comment on the proposed regulatory approach and the MACT alternatives being developed. The major topic areas resulting from these discussions included the need for cold-weather thinning limits, flexibility in compliance approaches, and the need for additional data regarding certain coating categories (i.e., inorganic zincs). Some of these meetings were held at EPA, while others were conducted at shipyard locations. In addition, individual consultations were conducted with three local (air quality management) districts in California regarding the use of the mass of VOHAP/volume of solids for determining compliance when the coating is thinned.

The EPA addressed many of the suggestions and comments received from State and local agencies during the public comment period, many of which will reduce the impact to small businesses. Some of these suggestions resulted in changes to the rule, including modification of the definition of pleasure craft to clarify that the standards apply only to coatings (and solvents) used on commercial and military vessels and not to boats in non-military shipyards less than 20 meters in length; modification of the definition

of affected source to ensure that the requirements of the standards apply only to those sources (major source shipyards) with a minimum annual marine coating usage of 1,000 Liters (264.2 gallons); exemption of any individual coating with annual usage less than 200 liters (52.8 gallons) (i.e., the applicable VOHAP limit); exemption of any coating applied via nonrefillable hand-held aerosol cans; making the equations used to determine thinning allowance the same for all options to provide a uniform basis for calculating emission reductions (i.e., associated with thinning additions or add-on control devices); extension of the initial notification deadline from 120 to 180 days and reduction of the frequency of reporting from the proposed quarterly requirement to semiannual, which allows shipyards to be consistent with current/upcoming Title V permit requirements; reorganization and clarification of the notification and recordkeeping and reporting requirement, including revision of the definitions and phrasing to ensure that the terminology is understandable; and the addition of 10 major sources based on data provided by Louisiana and Texas State agencies.

Some of the other major concerns that were noted in the State and/or local agency comments and that were considered by the EPA in developing the proposed and final rule involved realistic work practice standards, multiple compliance options to provide flexibility for shipyard owners/operators and State regulators, and streamlining (or eliminating) any overlapping recordkeeping and reporting requirements. Documentation of all meetings and public comments can be found in Docket A-92-11.

The EPA has considered the purpose and intent of Executive Order 12875 and has determined that shipbuilding and ship repair facility NESHAP are needed. The rule is generally required by statute under Section 112 of the CAA because shipbuilding and ship repair facilities emit significant quantities of air pollutants. Through meetings and consultations during project development and proposal, efforts were made to inform entities of the costs required to comply with the regulation; in addition, modifications were made to reduce the burden to small entities.

E. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires the EPA to consider potential impacts of proposed regulations on small business "entities." If a preliminary analysis indicates that a proposed regulation would have a

significant economic impact on 20 percent or more of small entities, then a regulatory flexibility analysis must be prepared. The EPA's analysis of these impacts was provided in the preamble to the proposed rule (59 FR 62681) and no negative impacts for small businesses will result from the changes incorporated into the final rule.

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

F. Unfunded Mandates Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under Section 202 of the UMRA, the EPA generally must prepare a written statement including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, Section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of Section 205 do not apply when they are inconsistent with applicable law. Moreover, Section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under Section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that the action promulgated today does not include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local, or tribal

governments in the aggregate, or to the private sector. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Incorporation by reference, Marine coating limits, Reporting and recordkeeping requirements, Shipbuilding and ship repair standards.

Dated: November 14, 1995.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is amended as follows:

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SHIPBUILDING AND SHIP REPAIR (SURFACE COATING)

1. The authority citation for part 63 continues to read as follows:

Authority: Sections 101, 112, 114, 116, and 301 of the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Pub. L. 101-549, 104 Stat. 2399).

2. Section 63.14 is amended by adding paragraph (b)(4) through (b)(14) to read as follows:

§ 63.14 Incorporation by reference.

* * * * *

(b) * * *

(4) ASTM D523-89, Standard Test Method for Specular Gloss, IBR approved for § 63.782.

(5) ASTM D1475-90, Standard Test Method for Density of Paint, Varnish, Lacquer, and Related Products, IBR approved for § 63.788 appendix A.

(6) ASTM D2369-93, Standard Test Method for Volatile Content of Coatings, IBR approved for § 63.788 appendix A.

(7) ASTM D3912-80, Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(8) ASTM D4017-90, Standard Test Method for Water and Paints and Paint Materials by Karl Fischer Method, IBR approved for § 63.788 appendix A.

(9) ASTM D4082-89, Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(10) ASTM D4256-89 [reapproved 1994], Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(11) ASTM D3792-91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for § 63.788 appendix A.

(12) ASTM D3257-93, Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography, IBR approved for § 63.786(b).

(13) ASTM E260-91, Standard Practice for Packed-Column Gas Chromatography, IBR approved for § 63.786(b).

(14) ASTM E180-93, Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals, IBR approved for § 63.786(b).

3. Part 63 is amended by adding subpart II to read as follows:

Subpart II—National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)

Secs.

63.780 Relationship of subpart II to subpart A of this part.

63.781 Applicability.

63.782 Definitions.

63.783 Standards.

63.784 Compliance dates.

63.785 Compliance procedures.

63.786 Test methods and procedures.

63.787 Notification requirements.

63.788 Recordkeeping and reporting requirements.

Table 1 to Subpart II of Part 63—General Provisions of Applicability to Subpart II
Table 2 to Subpart II of Part 63—Volatile Organic HAP (VOHAP) Limits for Marine Coatings

Table 3 to Subpart II of Part 63—Summary of Recordkeeping and Reporting Requirements

Appendix A to Subpart II of Part 63—VOC Data Sheet

Appendix B to Subpart II of Part 63—Maximum Allowable Thinning Rates As a Function of As Supplied VOC Content and Thinner Density

Subpart II—National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)

§ 63.780 Relationship of subpart II to subpart A of this part.

Table 1 of this subpart specifies the provisions of subpart A of this part that apply to owners and operators of sources subject to the provisions of this subpart.

§ 63.781 Applicability.

(a) The provisions of this subpart apply to shipbuilding and ship repair operations at any facility that is a major source.

(b) The provisions of this subpart do not apply to coatings used in volumes of less than 200 liters (52.8 gallons) per

year, provided the total volume of coating exempt under this paragraph does not exceed 1,000 liters per year (264 gallons per year) at any facility. Coatings exempt under this paragraph shall be clearly labeled as "low-usage exempt," and the volume of each such coating applied shall be maintained in the facility's records.

(c) The provisions of this subpart do not apply to coatings applied with hand-held, nonrefillable, aerosol containers or to unsaturated polyester resin (i.e., fiberglass lay-up) coatings. Coatings applied to suitably prepared fiberglass surfaces for protective or decorative purposes are subject to this subpart.

(d) The provisions in subpart A of this part pertaining to startups, shutdowns, and malfunctions and continuous monitoring do not apply to this source category unless an add-on control system is used to comply with this subpart in accordance with § 63.783(c).

§ 63.782 Definitions.

Terms used in this subpart are defined in the Clean Air Act (CAA), in subpart A of part 63, or in this section as follows:

Add-on control system means an air pollution control device such as a carbon absorber or incinerator that reduces pollution in an air stream by destruction or removal prior to discharge to the atmosphere.

Affected source means any shipbuilding or ship repair facility having surface coating operations with a minimum 1,000 liters (L) (264 gallons [gal]) annual marine coating usage that is subject to this subpart.

Air flask specialty coating means any special composition coating applied to interior surfaces of high pressure breathing air flasks to provide corrosion resistance and that is certified safe for use with breathing air supplies.

Antenna specialty coating means any coating applied to equipment through which electromagnetic signals must pass for reception or transmission.

Antifoulant specialty coating means any coating that is applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and that is registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act.

As applied means the condition of a coating at the time of application to the substrate, including any thinning solvent.

As supplied means the condition of a coating before any thinning, as sold and delivered by the coating manufacturer to the user.

Batch means the product of an individual production run of a coating manufacturer's process. A batch may vary in composition from other batches of the same product.

Bitumens mean black or brown materials that are soluble in carbon disulfide and consist mainly of hydrocarbons.

Bituminous resin coating means any coating that incorporates bitumens as a principal component and is formulated primarily to be applied to a substrate or surface to resist ultraviolet radiation and/or water.

Certify means, in reference to the volatile organic compounds (VOC) content or volatile organic hazardous air pollutants (VOHAP) content of a coating, to attest to the VOC content as determined through analysis by Method 24 of appendix A to 40 CFR part 60 or through use of forms and procedures outlined in appendix A of this subpart, or to attest to the VOHAP content as determined through an Administrator-approved test method. In the case of conflicting results, Method 24 of Appendix A to 40 CFR part 60 shall take precedence over the forms and procedures outlined in appendix A to this subpart for the options in which VOC is used as a surrogate for VOHAP.

Coating means any material that can be applied as a thin layer to a substrate and which cures to form a continuous solid film.

Cold-weather time period means any time during which the ambient temperature is below 4.5°C (40°F) and coating is to be applied.

Container of coating means the container from which the coating is applied, including but not limited to a bucket or pot.

Cure volatiles means reaction products which are emitted during the chemical reaction which takes place in some coating films at the cure temperature. These emissions are other than those from the solvents in the coating and may, in some cases, comprise a significant portion of total VOC and/or VOHAP emissions.

Epoxy means any thermoset coating formed by reaction of an epoxy resin (i.e., a resin containing a reactive epoxide with a curing agent).

Exempt compounds means specified organic compounds that are not considered VOC due to negligible photochemical reactivity. Exempt compounds are specified in 40 CFR 51.100(s).

Facility means all contiguous or adjoining property that is under common ownership or control, including properties that are separated

only by a road or other public right-of-way.

General use coating means any coating that is not a specialty coating.

Hazardous air pollutants (HAP) means any air pollutant listed in or pursuant to section 112(b) of the CAA.

Heat resistant specialty coating means any coating that during normal use must withstand a temperature of at least 204°C (400°F).

High-gloss specialty coating means any coating that achieves at least 85 percent reflectance on a 60 degree meter when tested by ASTM Method D523 (incorporation by reference—see § 63.14).

High-temperature specialty coating means any coating that during normal use must withstand a temperature of at least 426°C (800°F).

Inorganic zinc (high-build) specialty coating means a coating that contains 960 grams per liter (8 pounds per gallon) or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance. (These coatings are typically applied at more than 2 mil dry film thickness.)

Major source means any source that emits or has the potential to emit, in the aggregate, 9.1 megagrams per year (10 tons per year) or more of any HAP or 22.7 megagrams per year (25 tons per year) or more of any combination of HAP.

Maximum allowable thinning ratio means the maximum volume of thinner that can be added per volume of coating without violating the standards of § 63.783(a), as determined using Equation 1 of this subpart.

Military exterior specialty coating or *Chemical Agent Resistant Coatings ("CARC")* means any exterior topcoat applied to military or U.S. Coast Guard vessels that are subject to specific chemical, biological, and radiological washdown requirements.

Mist specialty coating means any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the paint film prior to curing.

Navigational aids specialty coating means any coating applied to Coast Guard buoys or other Coast Guard waterway markers when they are recoated aboard ship at their usage site and immediately returned to the water.

Nonskid specialty coating means any coating applied to the horizontal surfaces of a marine vessel for the specific purpose of providing slip resistance for personnel, vehicles, or aircraft.

add-on control system) of limiting emissions from coating operations. The application must include:

(i) An engineering material balance evaluation that provides a comparison of the emissions that would be achieved using the alternative means to those that would result from using coatings that comply with the limits in Table 2 of this subpart, or the results from an emission test that accurately measures the capture efficiency and control device efficiency achieved by the control system and the composition of the associated coatings so that the emissions comparison can be made;

(ii) A proposed monitoring protocol that includes operating parameter values to be monitored for compliance and an explanation of how the operating parameter values will be established through a performance test; and

(iii) Details of appropriate recordkeeping and reporting procedures.

(2) The Administrator shall approve the alternative means of limiting emissions if, in the Administrator's judgment, postcontrol emissions of VOHAP per volume applied solids will be no greater than those from the use of coatings that comply with the limits in Table 2 of this subpart.

(3) The Administrator may condition approval on operation, maintenance, and monitoring requirements to ensure that emissions from the source are no greater than those that would otherwise result from this subpart. § 63.784 Compliance dates.

(a) Each owner or operator of an existing affected source shall comply within 1 year after the effective date of this subpart.

(b) Each owner or operator of an existing unaffected area source that increases its emissions of (or its potential to emit) HAP such that the source becomes a major source that is subject to this subpart shall comply within 1 year after the date of becoming a major source.

(c) Each owner or operator of a new or reconstructed source shall comply with this subpart according to the schedule in § 63.6(b).

§ 63.785 Compliance procedures.

(a) For each batch of coating that is received by an affected source, the owner or operator shall (see Figure 1 of this section for a flow diagram of the compliance procedures):

(1) Determine the coating category and the applicable VOHAP limit as specified in § 63.783(a).

(2) Certify the as-supplied VOC content of the batch of coating. The owner or operator may use a

certification supplied by the manufacturer for the batch, although the owner or operator retains liability should subsequent testing reveal a violation. If the owner or operator performs the certification testing, only one of the containers in which the batch of coating was received is required to be tested.

(b)(1) In lieu of testing each batch of coating, as applied, the owner or operator may determine compliance with the VOHAP limits using any combination of the procedures described in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) of this section. The procedure used for each coating shall be determined and documented prior to application.

(2) The results of any compliance demonstration conducted by the affected source or any regulatory agency using Method 24 shall take precedence over the results using the procedures in paragraphs (c)(1), (c)(2), or (c)(3) of this section.

(3) The results of any compliance demonstration conducted by the affected source or any regulatory agency using an approved test method to determine VOHAP content shall take precedence over the results using the procedures in paragraph (c)(4) of this section.

(c)(1) *Coatings to which thinning solvent will not be added.* For coatings to which thinning solvent (or any other material) will not be added under any circumstance or to which only water is added, the owner or operator of an affected source shall comply as follows:

(i) Certify the as-applied VOC content of each batch of coating.

(ii) Notify the persons responsible for applying the coating that no thinning solvent may be added to the coating by affixing a label to each container of coating in the batch or through another means described in the implementation plan required in § 63.787(b).

(iii) If the certified as-applied VOC content of each batch of coating used during a calendar month is less than or equal to the applicable VOHAP limit in § 63.783(a) (either in terms of g/L of coating or g/L of solids), then compliance is demonstrated for that calendar month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(2) *Coatings to which thinning solvent will be added—coating-by-coating compliance.* For a coating to which thinning solvent is routinely or sometimes added, the owner or operator shall comply as follows:

(i) Prior to the first application of each batch, designate a single thinner for the coating and calculate the maximum

allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch as follows:

$$R = \frac{(V_s)(\text{VOHAP limit}) - m_{\text{VOC}}}{D_{\text{th}}} \quad \text{Eqn. 1}$$

where:

R=Maximum allowable thinning ratio for a given batch (L thinner/L coating as supplied);

V_s =Volume fraction of solids in the batch as supplied (L solids/L coating as supplied);

VOHAP limit=Maximum allowable as-applied VOHAP content of the coating (g VOHAP/L solids);

m_{VOC} =VOC content of the batch as supplied [g VOC (including cure volatiles and exempt compounds on the HAP list)/L coating (including water and exempt compounds) as supplied];

D_{th} =Density of the thinner (g/L).

If V_s is not supplied directly by the coating manufacturer, the owner or operator shall determine V_s as follows:

$$V_s = 1 - \frac{m_{\text{volatiles}}}{D_{\text{avg}}} \quad \text{Eqn. 2}$$

where:

$m_{\text{volatiles}}$ =Total volatiles in the batch, including VOC, water, and exempt compounds (g/L coating); and

D_{avg} =Average density of volatiles in the batch (g/L).

The procedures specified in § 63.786(d) may be used to determine the values of variables defined in this paragraph. In addition, the owner or operator may choose to construct nomographs, based on Equation 1 of this subpart, similar or identical to the one provided in appendix B of this subpart as a means of easily estimating the maximum allowable thinning ratio.

(ii) Prior to the first application of each batch, notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch of the coating by affixing a label to each container of coating or through another means described in the implementation plan required in § 63.787(b).

(iii) By the 15th day of each calendar month, determine the volume of each batch of the coating used, as supplied, during the previous month.

(iv) By the 15th day of each calendar month, determine the total allowable volume of thinner for the coating used during the previous month as follows:

Nonvolatiles (or volume solids) means substances that do not evaporate readily. This term refers to the film-forming material of a coating.

Normally closed means a container or piping system is closed unless an operator is actively engaged in adding or removing material.

Nuclear specialty coating means any protective coating used to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusion by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure (ASTM D4082-89 [incorporation by reference—see § 63.14]), relatively easy to decontaminate (ASTM D4256-89 [reapproved 1994] [incorporation by reference—see § 63.14]), and resistant to various chemicals to which the coatings are likely to be exposed (ASTM D3912-80 [incorporation by reference—see § 63.14]). [For nuclear coatings, see the general protective requirements outlined by the U.S. Nuclear Regulatory Commission in a report entitled "U.S. Atomic Energy Commission Regulatory Guide 1.54" dated June 1973, available through the Government Printing Office at (202) 512-2249 as document number A74062-00001.]

Operating parameter value means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

Organic zinc specialty coating means any coating derived from zinc dust incorporated into an organic binder that contains more than 960 grams of elemental zinc per liter (8 pounds per gallon) of coating, as applied, and that is used for the expressed purpose of corrosion protection.

Pleasure craft means any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 20 meters in length. A vessel rented exclusively to or chartered by individuals for such purposes shall be considered a pleasure craft.

Pretreatment wash primer specialty coating means any coating that contains a minimum of 0.5 percent acid, by mass, and is applied only to bare metal to etch the surface and enhance adhesion of subsequent coatings.

Repair and maintenance of thermoplastic coating of commercial vessels (specialty coating) means any vinyl, chlorinated rubber, or bituminous resin coating that is applied over the same type of existing coating to perform

the partial recoating of any in-use commercial vessel. (This definition does not include coal tar epoxy coatings, which are considered "general use" coatings.)

Rubber camouflage specialty coating means any specially formulated epoxy coating used as a camouflage topcoat for exterior submarine hulls and sonar domes. Sealant for thermal spray aluminum means any epoxy coating applied to thermal spray aluminum surfaces at a maximum thickness of 1 dry mil.

Ship means any marine or fresh-water vessel used for military or commercial operations, including self-propelled vessels, those propelled by other craft (barges), and navigational aids (buoys). This definition includes, but is not limited to, all military and Coast Guard vessels, commercial cargo and passenger (cruise) ships, ferries, barges, tankers, container ships, patrol and pilot boats, and dredges. For purposes of this subpart, pleasure crafts and offshore oil and gas drilling platforms are not considered ships.

Shipbuilding and ship repair operations means any building, repair, repainting, converting, or alteration of ships.

Special marking specialty coating means any coating that is used for safety or identification applications, such as markings on flight decks and ships' numbers.

Specialty coating means any coating that is manufactured and used for one of the specialized applications described within this list of definitions.

Specialty interior coating means any coating used on interior surfaces aboard U.S. military vessels pursuant to a coating specification that requires the coating to meet specified fire retardant and low toxicity requirements, in addition to the other applicable military physical and performance requirements.

Tack specialty coating means any thin film epoxy coating applied at a maximum thickness of 2 dry mils to prepare an epoxy coating that has dried beyond the time limit specified by the manufacturer for the application of the next coat.

Thinner means a liquid that is used to reduce the viscosity of a coating and that evaporates before or during the cure of a film.

Thinning ratio means the volumetric ratio of thinner to coating, as supplied.

Thinning solvent: see Thinner.

Undersea weapons systems specialty coating means any coating applied to any component of a weapons system intended to be launched or fired from under the sea.

Volatile organic compounds (VOC) is as defined in § 51.100(s) of this chapter.

Volatile organic hazardous air pollutants (VOHAP) means any compound listed in or pursuant to section 112(b) of the CAA that contains carbon, excluding metallic carbides and carbonates. This definition includes VOC listed as HAP and exempt compounds listed as HAP.

Weld-through preconstruction primer (specialty coating) means a coating that provides corrosion protection for steel during inventory, is typically applied at less than 1 mil dry film thickness, does not require removal prior to welding, is temperature resistant (burn back from a weld is less than 1.25 centimeters [0.5 inch]), and does not normally require removal before applying film-building coatings, including inorganic zinc high-build coatings. When constructing new vessels, there may be a need to remove areas of weld-through preconstruction primer due to surface damage or contamination prior to application of film-building coatings.

§ 63.783 Standards.

(a) No owner or operator of any existing or new affected source shall cause or allow the application of any coating to a ship with an as-applied VOHAP content exceeding the applicable limit given in Table 2 of this subpart, as determined by the procedures described in § 63.785 (c)(1) through (c)(4). For the compliance procedures described in § 63.785 (c)(1) through (c)(3), VOC shall be used as a surrogate for VOHAP, and Method 24 of Appendix A to 40 CFR part 60 shall be used as the definitive measure for determining compliance. For the compliance procedure described in § 63.785(c)(4), an alternative test method capable of measuring independent VOHAP shall be used to determine compliance. The method must be submitted to and approved by the Administrator.

(b) Each owner or operator of a new or existing affected source shall ensure that:

(1) All handling and transfer of VOHAP-containing materials to and from containers, tanks, vats, drums, and piping systems is conducted in a manner that minimizes spills.

(2) All containers, tanks, vats, drums, and piping systems are free of cracks, holes, and other defects and remain closed unless materials are being added to or removed from them.

(c) **Approval of alternative means of limiting emissions.** (1) The owner or operator of an affected source may apply to the Administrator for permission to use an alternative means (such as an

$$V_{th} = \sum_{i=1}^n (R \times V_b)_i + \sum_{i=1}^n (R_{cold} \times V_{b-cold})_i \quad \text{Eqn. 3}$$

where:

V_{0i} = Total allowable volume of thinner for the previous month (L thinner):

V_b = Volume of each batch, as supplied and before being thinned, used during non-cold-weather days of the previous month (L coating as supplied):

R_{cold} = Maximum allowable thinning ratio for each batch used during cold-weather days (L thinner/L coating as supplied):

V_{b-cold} = Volume of each batch, as supplied and before being thinned, used during cold-weather days of the previous month (L coating as supplied):

i = Each batch of coating; and

n = Total number of batches of the coating.

(v) By the 15th day of each calendar month, determine the volume of thinner actually used with the coating during the previous month.

(vi) If the volume of thinner actually used with the coating [paragraph (c)(3)(v) of this section] is less than or equal to the total allowable volume of thinner for the coating [paragraph (c)(3)(iv) of this section], then compliance is demonstrated for the coating for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(3) *Coatings to which the same thinning solvent will be added—group compliance.* For coatings to which the same thinning solvent (or other material) is routinely or sometimes added, the owner or operator shall comply as follows:

(i) Designate a single thinner to be added to each coating during the month

and "group" coatings according to their designated thinner.

(ii) Prior to the first application of each batch, calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this part) for each batch of coating in the group using the equations in paragraph (c)(2) of this section.

(iii) Prior to the first application of each "batch," notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch in the group by affixing a label to each container of coating or through another means described in the implementation plan required in § 63.787(b).

(iv) By the 15th day of each calendar month, determine the volume of each batch of the group used, as supplied, during the previous month.

(v) By the 15th day of each calendar month, determine the total allowable volume of thinner for the group for the previous month using Equation 3 of this subpart.

(vi) By the 15th day of each calendar month, determine the volume of thinner actually used with the group during the previous month:

(vii) If the volume of thinner actually used with the group [paragraph (c)(3)(vi) of this section] is less than or equal to the total allowable volume of thinner for the group [paragraph (c)(3)(v) of this section], then compliance is demonstrated for the group for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(4) *Demonstration of compliance through an alternative (i.e., other than Method 24 of Appendix A to 40 CFR part 60) test method.* The owner or operator shall comply as follows:

(i) Certify the as-supplied VOHAP content (g VOHAP/L solids) of each batch of coating.

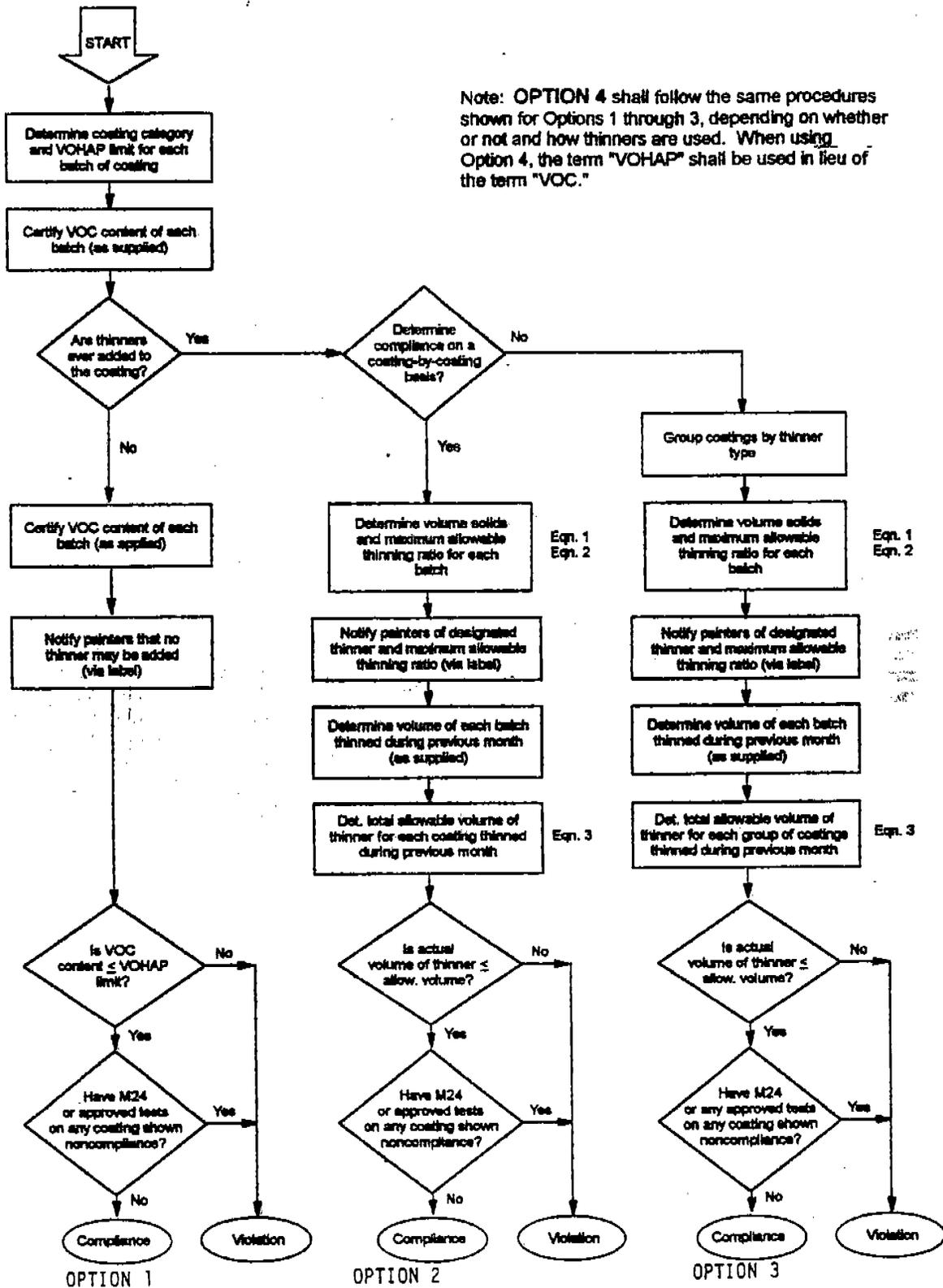
(ii) If no thinning solvent will be added to the coating, the owner or operator of an affected source shall follow the procedure described in § 63.785(c)(1), except that VOHAP content shall be used in lieu of VOC content.

(iii) If thinning solvent will be added to the coating, the owner or operator of an affected source shall follow the procedure described in § 63.785(c)(2) or (3), except that in Equation 1 of this subpart: the term "m_{VOC}" shall be replaced by the term "m_{VOHAP}," defined as the VOHAP content of the coating as supplied (g VOHAP/L coating) and the term "D_{th}" shall be replaced by the term "D_{th(VOHAP)}" defined as the average density of the VOHAP thinner(s) (g/L).

(d) A violation revealed through any approved test method shall result in a 1-day violation for enforcement purposes. A violation revealed through the recordkeeping procedures described in paragraphs (c)(1) through (c)(4) of this section shall result in a 30-day violation for enforcement purposes, unless the owner or operator provides sufficient data to demonstrate the specific days during which noncompliant coatings were applied.

BILLING CODE 6560-50-P

Figure 1 to §63.785 Flow diagram of compliance procedures



§ 63.786 Test methods and procedures.

(a) For the compliance procedures described in § 63.785(c) (1) through (c)(3), Method 24 of 40 CFR part 60, appendix A, is the definitive method for determining the VOC content of coatings, as supplied or as applied. When a coating or thinner contains exempt compounds that are volatile HAP or VOHAP, the owner or operator shall ensure, when determining the VOC content of a coating, that the mass of these exempt compounds is included.

(b) For the compliance procedure described in § 63.785(c)(4), the Administrator must approve the test method for determining the VOHAP content of coatings and thinners. As part of the approval, the test method must meet the specified accuracy limits indicated below for sensitivity, duplicates, repeatability, and reproducibility coefficient of variation each determined at the 95 percent confidence limit. Each percentage value below is the corresponding coefficient of variation multiplied by 2.8 as in the ASTM Method E180-93: Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals (incorporation by reference—see § 63.14).

(1) *Sensitivity.* The overall sensitivity must be sufficient to identify and calculate at least one mass percent of the compounds of interest based on the original sample. The sensitivity is defined as ten times the noise level as specified in ASTM Method D3257-93: Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography (incorporation by reference—see § 63.14). In determining the sensitivity, the level of sample dilution must be factored in.

(2) *Repeatability.* First, at the 0.1–5 percent analyte range the results would be suspect if duplicates vary by more than 6 percent relative and/or day to day variation of mean duplicates by the same analyst exceeds 10 percent relative. Second, at greater than 5 percent analyte range the results would be suspect if duplicates vary by more than 5 percent relative and/or day to day variation of duplicates by the same analyst exceeds 5 percent relative.

(3) *Reproducibility.* First, at the 0.1–5 percent analyte range the results would be suspect if lab to lab variation exceeds 60 percent relative. Second, at greater than 5 percent range the results would be suspect if lab to lab variation exceeds 20 percent relative.

(4) Any test method should include information on the apparatus, reagents and materials, analytical procedure, procedure for identification and

confirmation of the volatile species in the mixture being analyzed, precision and bias, and other details to be reported. The reporting should also include information on quality assurance (QA) auditing.

(5) Multiple and different analytical techniques must be used for positive identification if the components in a mixture under analysis are not known. In such cases a single column gas chromatograph (GC) may not be adequate. A combination of equipment may be needed such as a GC/mass spectrometer or GC/infrared system. (If a GC method is used, the operator must use practices in ASTM Method E260-91: Standard Practice for Gas Chromatography [incorporation by reference—see § 63.14].)

(c) A coating manufacturer or the owner or operator of an affected source may use batch formulation data as a test method in lieu of Method 24 of Appendix A to 40 CFR part 60 to certify the as-supplied VOC content of a coating if the manufacturer or the owner or operator has determined that batch formulation data have a consistent and quantitatively known relationship to Method 24 results. This determination shall consider the role of cure volatiles, which may cause emissions to exceed an amount based solely upon coating formulation data. Notwithstanding such determination, in the event of conflicting results, Method 24 of appendix A of 40 CFR part 60 shall take precedence.

(d) Each owner or operator of an affected source shall use or ensure that the manufacturer uses the form and procedures mentioned in appendix A of this subpart to determine values for the thinner and coating parameters used in Equations 1 and 2 of this subpart. The owner or operator shall ensure that the coating/thinner manufacturer (or supplier) provides information on the VOC and VOHAP contents of the coatings/thinners and the procedure(s) used to determine these values.

§ 63.787 Notification requirements.

(a) Each owner or operator of an affected source shall comply with all applicable notification requirements in § 63.9(a) through (d) and (i) through (j), with the exception that the deadline specified in § 63.9(b) (2) and (3) shall be extended from 120 days to 180 days. Any owner or operator that receives approval pursuant to § 63.783(c) to use an add-on control system to control coating emissions shall comply with the applicable requirements of § 63.9(e) through (h).

(b) *Implementation plan.* The provisions of § 63.9(a) apply to the requirements of this paragraph.

(1) Each owner or operator of an affected source shall:

(i) Prepare a written implementation plan that addresses each of the subject areas specified in paragraph (b)(3) of this section; and

(ii) Not later than 180 days after the effective date of this subpart, submit the implementation plan to the Administrator for approval along with the notification required by § 63.9(b) (2) or (5), as applicable.

(2) The Administrator may require revisions to the initial plan where the Administrator finds that the plan does not adequately address each subject area listed in paragraph (b)(3) of this section or that the requirements in the plan are unclear.

(3) *Implementation plan contents.* Each implementation plan shall address the following subject areas:

(i) *Coating compliance procedures.* The implementation plan shall include the compliance procedure(s) under § 63.785(c) that the source intends to use.

(ii) *Recordkeeping procedures.* The implementation plan shall include the procedures for maintaining the records required under § 63.788, including the procedures for gathering the necessary data and making the necessary calculations.

(iii) *Transfer, handling, and storage procedures.* The implementation plan shall include the procedures for ensuring compliance with § 63.783(b).

(4) *Major sources that intend to become area sources by the compliance date.* Existing major sources that intend to become area sources by the compliance date December 16, 1996 may choose to submit, in lieu of the implementation plan required under paragraph (b)(1) of this section, a statement that, by the compliance date, the major source intends to obtain and comply with federally enforceable limits on their potential to emit which make the facility an area source. § 63.788 Recordkeeping and reporting requirements.

(a) Each owner or operator of an affected source shall comply with the applicable recordkeeping and reporting requirements in § 63.10 (a), (b), (d), and (f). Any owner that receives approval pursuant to § 63.783(c) to use an add-on control system to control coating emissions shall also comply with the applicable requirements of § 63.10 (c) and (e). A summary of recordkeeping and reporting requirements is provided in Table 3 of this subpart.

(b) *Recordkeeping requirements.* (1) Each owner or operator of an unaffected major source, as described in § 63.781(b), shall record the total volume of coating applied at the source to ships. Such records shall be compiled monthly and maintained for a minimum of 5 years.

(2) Each owner or operator of an affected source shall compile records on a monthly basis and maintain those records for a minimum of 5 years. At a minimum, these records shall include:

- (i) All documentation supporting initial notification;
- (ii) A copy of the affected source's approved implementation plan;
- (iii) The volume of each low-usage-exempt coating applied;
- (iv) Identification of the coatings used, their appropriate coating categories, and the applicable VOHAP limit;
- (v) Certification of the as-supplied VOC content of each batch of coating;
- (vi) A determination of whether containers meet the standards as described in § 63.783(b)(2); and
- (vii) The results of any Method 24 of appendix A to 40 CFR part 60 or approved VOHAP measurement test conducted on individual containers of coating, as applied.

(3) The records required by paragraph (b)(2) of this section shall include additional information, as determined by the compliance procedure(s) described in § 63.785(c) that each affected source followed:

(i) *Coatings to which thinning solvent will not be added.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(1) shall contain the following information:

- (A) Certification of the as-applied VOC content of each batch of coating; and
- (B) The volume of each coating applied.

(ii) *Coatings to which thinning solvent will be added—coating-by-coating compliance.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(2) shall contain the following information:

- (A) The density and mass fraction of water and exempt compounds of each thinner and the volume fraction of solids (nonvolatiles) in each batch, including any calculations;
- (B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart for each batch of coating, including calculations;
- (C) If an affected source chooses to comply with the cold-weather limits,

the dates and times during which the ambient temperature at the affected source was below 4.5°C (40°F) at the time the coating was applied and the volume used of each batch of the coating, as supplied, during these dates;

(D) The volume used of each batch of the coating, as supplied;

(E) The total allowable volume of thinner for each coating, including calculations; and

(F) The actual volume of thinner used for each coating.

(iii) *Coatings to which the same thinning solvent will be added—group compliance.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(3) shall contain the following information:

(A) The density and mass fraction of water and exempt compounds of each thinner and the volume fraction of solids in each batch, including any calculations;

(B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating, including calculations;

(C) If an affected source chooses to comply with the cold-weather limits, the dates and times during which the ambient temperature at the affected source was below 4.5°C (40°F) at the time the coating was applied and the volume used of each batch in the group, as supplied, during these dates;

(D) Identification of each group of coatings and their designated thinners;

(E) The volume used of each batch of coating in the group, as supplied;

(F) The total allowable volume of thinner for the group, including calculations; and

(G) The actual volume of thinner used for the group.

(iv) *Demonstration of compliance through an alternative (i.e., non-Method 24 in appendix A to 40 CFR part 60) test method.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(4) shall contain the following information:

(A) Identification of the Administrator-approved VOHAP test method or certification procedure;

(B) For coatings to which the affected source does not add thinning solvents, the source shall record the certification of the as-supplied and as-applied VOHAP content of each batch and the volume of each coating applied;

(C) For coatings to which the affected source adds thinning solvent on a coating-by-coating basis, the source shall record all of the information

required to be recorded by paragraph (b)(3)(ii) of this section; and

(D) For coatings to which the affected source adds thinning solvent on a group basis, the source shall record all of the information required to be recorded by paragraph (b)(3)(iii) of this section.

(4) If the owner or operator of an affected source detects a violation of the standards specified in § 63.783, the owner or operator shall, for the remainder of the reporting period during which the violation(s) occurred, include the following information in his or her records:

(i) A summary of the number and duration of deviations during the reporting period, classified by reason, including known causes for which a Federally-approved or promulgated exemption from an emission limitation or standard may apply.

(ii) Identification of the data availability achieved during the reporting period, including a summary of the number and total duration of incidents that the monitoring protocol failed to perform in accordance with the design of the protocol or produced data that did not meet minimum data accuracy and precision requirements, classified by reason.

(iii) Identification of the compliance status as of the last day of the reporting period and whether compliance was continuous or intermittent during the reporting period.

(iv) If, pursuant to paragraph (b)(4)(iii) of this section, the owner or operator identifies any deviation as resulting from a known cause for which no Federally-approved or promulgated exemption from an emission limitation or standard applies, the monitoring report shall also include all records that the source is required to maintain that pertain to the periods during which such deviation occurred and:

- (A) The magnitude of each deviation;
- (B) The reason for each deviation;
- (C) A description of the corrective action taken for each deviation, including action taken to minimize each deviation and action taken to prevent recurrence; and
- (D) All quality assurance activities performed on any element of the monitoring protocol.

(c) *Reporting requirements.* Before the 60th day following completion of each 6-month period after the compliance date specified in § 63.784, each owner or operator of an affected source shall submit a report to the Administrator for each of the previous 6 months. The report shall include all of the information that must be retained pursuant to paragraphs (b) (2) through (3) of this section, except for that

information specified in paragraphs (b)(2)(i) through (ii), (b)(2)(v), (b)(3)(i)(A), (b)(3)(ii)(A), and (b)(3)(iii)(A). If a violation at an affected source is detected, the source shall also

report the information specified in paragraph (b)(4) of this section for the reporting period during which the violation(s) occurred. To the extent possible, the report shall be organized

according to the compliance procedure(s) followed each month by the affected source.

TABLE 1 TO SUBPART II OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART II

Reference	Applies to subpart II	Comment
63.1(a)(1)–(3)	Yes	Subpart II clarifies the applicability of each paragraph in subpart A to sources subject to subpart II.
63.1(a)(4)	Yes	
63.1(a)(5)–(7)	Yes	Discusses State programs.
63.1(a)(8)	No	
63.1(a)(9)–(14)	Yes	§ 63.781 specifies applicability in more detail.
63.1(b)(1)	Yes	
63.1(b)(2)–(3)	Yes	Additional terms are defined in § 63.782; when overlap between subparts A and II occurs, subpart II takes precedence.
63.1(c)–(e)	Yes	
63.2	Yes	Other units used in subpart II are defined in that subpart.
63.3	Yes	Except information on control devices and control efficiencies should not be included in the application unless an add-on control system is or will be used to comply with subpart II in accordance with § 63.783(c).
63.4	Yes	
63.5(a)–(c)	Yes	Except § 63.784(a) specifies the compliance date for existing affected sources.
63.5(d)	Yes	
63.5(e)–(f)	Yes	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then these paragraphs do apply.
63.6(a)–(b)	Yes	
63.6(c)–(d)	Yes	§ 63.783(c) specifies procedures for application and approval of alternative means of limiting emissions.
63.6(e)–(f)	No	
63.6(g)	No	Subpart II does not contain any opacity or visible emission standards.
63.6(h)	No	
63.6(i)–(l)	Yes	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.
63.7	No	
63.8	No	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.
63.9(a)–(d)	Yes	
63.9(e)	No	§ 63.787(a) extends the initial notification deadline to 180 days. § 63.787(b) requires an implementation plan to be submitted with the initial notification.
63.9(f)	No	
63.9(g)–(h)	No	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this paragraph does apply.
63.9(i)–(j)	Yes	
63.10(a)–(b)	Yes	§ 63.788(b)–(c) list additional recordkeeping and reporting requirements.
63.10(c)	No	
63.10(d)	Yes	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this paragraph does apply.
63.10(e)	No	
63.10(f)	Yes	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.
63.11	No	
63.12–63.15	Yes	

TABLE 2 TO SUBPART II OF PART 63.—VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS

Coating category	VOHAP limits ^{a b c}		
	Grams/liter coating (minus water and exempt compounds)	Grams/liter solids ^d	
		t ≥ 4.5° C	t < 4.5° C ^e
General use	340	571	728
Specialty:			
Air flask	340	571	728
Antenna	530	1,439	
Antifoulant	400	765	971
Heat resistant	420	841	1,069
High-gloss	420	841	1,069
High-temperature	500	1,237	1,597

TABLE 2 TO SUBPART II OF PART 63.—VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS—Continued

Coating category	VOHAP limits ^{a,b,c}		
	Grams/liter coating (minus water and exempt compounds)	Grams/liter solids ^d	
		t ≥ 4.5° C	t < 4.5° C ^e
Inorganic zinc high-build	340	571	728
Military exterior	340	571	728
Mist	610	2,235	
Navigational aids	550	1,597	
Nonskid	340	571	728
Nuclear	420	841	1,069
Organic zinc	360	630	802
Pretreatment wash primer	780	11,095	
Repair and maint. of thermoplastics	550	1,597	
Rubber camouflage	340	571	728
Sealant for thermal spray aluminum	610	2,235	
Special marking	490	1,178	
Specialty interior	340	571	728
Tack coat	610	2,235	
Undersea weapons systems	340	571	728
Weld-through precon. primer	650	2,885	

^aThe limits are expressed in two sets of equivalent units. Either set of limits may be used for the compliance procedure described in § 63.785(c)(1), but only the limits expressed in units of g/L solids (nonvolatiles) shall be used for the compliance procedures described in § 63.785(c) (2) through (4).
^bVOC (including exempt compounds listed as HAP) shall be used as a surrogate for VOHAP for those compliance procedures described in § 63.785(c) (1) through (3).
^cTo convert from g/L to lb/gal, multiply by (3.785 L/gal)(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.
^dVOHAP limits expressed in units of mass of VOHAP per volume of solids were derived from the VOHAP limits expressed in units of mass of VOHAP per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.
^eThese limits apply during cold-weather time periods, as defined in § 63.782. Cold-weather allowances are not given to coatings in categories that permit over a 40 percent VOHAP content by volume. Such coatings are subject to the same limits regardless of weather conditions.

TABLE 3 TO SUBPART II OF PART 63.—SUMMARY OF RECORDKEEPING AND REPORTING REQUIREMENTS^{a,b,c}

Requirement	All Opts.		Option 1		Option 2		Option 3	
	Rec	Rep	Rec	Rep	Rec	Rep	Rec	Rep
Notification (§ 63.9(a)-(d))	X	X						
Implementation plan (§ 63.787(b)) ^d	X	X						
Volume of coating applied at unaffected major sources (§ 63.781(b))	X							
Volume of each low-usage-exempt coating applied at affected sources (§ 63.781(c)) ...	X	X						
ID of the coatings used, their appropriate coating categories, and the applicable VOHAP limit	X	X						
Determination of whether containers meet the standards described in § 63.783(b)(2) ...	X	X						
Results of M-24 or other approved tests	X	X						
Certification of the as-supplied VOC content of each batch	X							
Certification of the as-applied VOC content of each batch			X					
Volume of each coating applied			X	X				
Density of each thinner and volume fraction of solids in each batch					X	X		
Maximum allowable thinning ratio(s) for each batch					X	X	X	X
Volume used of each batch, as supplied					X	X	X	X
Total allowable volume of thinner					X	X	X	X
Actual volume of thinner used					X	X	X	X
Identification of each group of coatings and designated thinners							X	X

^aAffected sources that comply with the cold-weather limits must record and report additional information, as specified in § 63.788(b)(3) (ii)(C), (iii)(C), and (iv)(D).
^bAffected sources that detect a violation must record and report additional information, as specified in § 63.788(b)(4).
^cOPTION 4: the recordkeeping and reporting requirements of Option 4 are identical to those of Options 1, 2, or 3, depending on whether and how thinners are used. However, when using Option 4, the term "VOHAP" shall be used in lieu of the term "VOC," and the owner or operator shall record and report the Administrator-approved VOHAP test method or certification procedure.
^dMajor sources that intend to become area sources by the compliance date may, in lieu of submitting an implementation plan, choose to submit a statement of intent as specified in § 63.787(b)(4).

Appendix A to Subpart II of Part 63—VOC Data Sheet ¹

*Properties of the Coating "As Supplied" by the Manufacturer*²

Coating Manufacturer: _____
 Coating Identification: _____
 Batch Identification: _____

¹ Incorporation by reference—see § 63.14.

² Adapted from EPA-340/1-86-016 (July 1986), p. II-2.

³ The subscript "s" denotes each value is for the coating "as supplied" by the manufacturer.

Supplied To: _____

Properties of the coating as supplied ¹ to the customer:

- A. Coating Density: (D_c)_s _____ g/L
 ASTM D1475-90 * Other ³
- B. Total Volatiles: (m_v)_s _____ Mass Percent
 ASTM D2369-93 * Other ³
- C. Water Content: 1. (m_w)_s _____ Mass Percent
 ASTM D3792-91 * ASTM D4017-90 * Other ³
 2. (v_w)_s _____ Volume Percent

³ Explain the other method used under "Remarks."

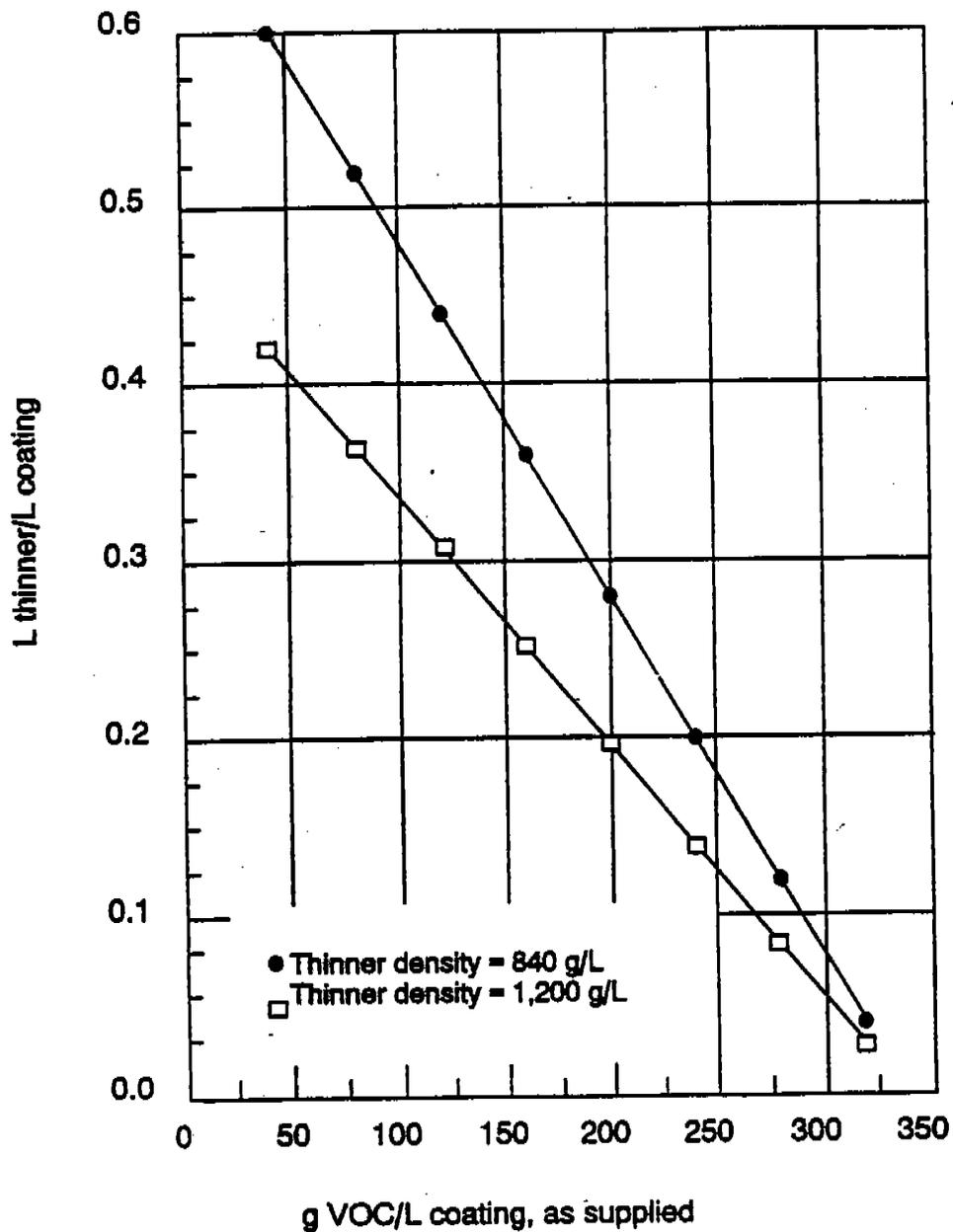
- Calculated Other ³
- D. Organic Volatiles: (m_o)_s _____ Mass Percent
- E. Nonvolatiles: (v_n)_s _____ Volume Percent
 Calculated Other ³
- F. VOC Content (VOC)_s:
 1. _____ g/L solids (nonvolatiles)
 2. _____ g/L coating (less water and exempt compounds)
- G. Thinner Density: D_{th} _____ g/L
 ASTM _____ Other ³

Remarks: (use reverse side) _____

Signed: _____ Date: _____

BILLING CODE 6560-50-P

Appendix B To Subpart II of Part 63 -- Maximum Allowable Thinning Rates As A Function Of As Supplied VOC Content And Thinner Density^{a,b}



^a These graphs represent maximum allowable thinning ratios for general use coatings without water or exempt compounds.

^b The average density of the volatiles in the coating was assumed = 840 g solvent/L solvent.

it. Verification procedures shall be conducted at reasonable times during normal business hours.

(5) *Anti-duplication rules.* A filer shall be subject to no more than one verification procedure per calendar year. An Annual Statement of Account shall be subject to a verification procedure only once.

(e) *Scope of verification.* The verifying auditor shall limit his or her examination to verifying the information required in the Annual Statement of Account. To the extent possible, the verifying auditor shall inspect the information contained in the primary auditor's report and the primary auditor's working papers. If the verifying auditor believes that access to the records, files, or other materials in the control of the filer is required according to GAAS, he or she may, after consultation with the primary auditor, require the production of these documents as well. The verifying auditor and the primary auditor shall act in good faith using reasonable professional judgment, with the intention of reaching a reasonable accommodation as to the necessity and scope of examination of any additional documents, but the decision to require the production of additional documents is solely that of the verifying auditor.

(f) *Verification Report.* Upon concluding the verification procedure, the verifying auditor shall render a report enumerating in reasonable detail the procedures performed by the verifying auditor and his or her findings. Such findings shall state whether there was any failure of the primary auditor to conduct properly the primary audit or obtain a reliable result, and whether there was any error in the Annual Statement of Account, itemized by amount and by the filer's elected fiscal year. If there was such failure or error, the report shall specify all evidence from which the verifying auditor reached such conclusions. Such evidence shall be listed and identified in an appendix to the report in sufficient detail to enable a third party to reasonably understand or interpret the evidence on which the verifying auditor based his or her conclusion. If there was no such failure or error, the report shall so state.

(g) *Distribution of Report.* Copies of the verifying auditor's report shall be subject to the confidentiality provisions of § 201.29 and shall be distributed as follows:

(1) One copy, excluding the appendix, if applicable, shall be filed with the Register of Copyrights.

(2) One copy, with the appendix, if applicable, shall be submitted to each of

the interested copyright parties who retained the services of the verifying auditor and who are authorized to receive such information according to § 201.29.

(3) One copy, with the appendix, if applicable, shall be submitted to the filer of the Annual Statement of Account.

(4) One copy, with the appendix, if applicable, shall be submitted to the primary auditor.

(h) *Retention of Report.* The Register of Copyrights will retain his or her copy of the verifying auditor's report for three years following the date the copy of the verifying auditor's report is filed.

(i) *Costs of Verification.* The joint interested copyright parties who requested the verification procedure shall pay the fees of the verifying auditor and the primary auditor for their work performed in connection with the verification procedure, except, if the verification procedure results in a judicial determination or the filer's agreement that royalty payments were understated on the Annual Statement of Account, then,

(1) if the amount is less than five percent (5%) of the amount stated on the Annual Statement of Account, that amount shall first be used to pay the fees of the verifying auditor and the primary auditor, and any remaining amount plus any applicable interest on the total amount shall be deposited, allocated by the filer's elected fiscal year, with the Register of Copyrights, or

(2) if the amount is equal to or greater than five percent (5%) of the amount stated on the Annual Statement of Account, the filer shall pay the fees of the verifying auditor and the primary auditor, and, in addition, shall deposit the amount found to be due plus any applicable interest on the total amount, allocated by the filer's elected fiscal year, with the Register of Copyrights.

(j) *Independence and qualifications of verifying auditor.*

(1) The verifying auditor shall be qualified and independent as defined in this section. If the filer has reason to believe that the verifying auditor is not qualified or independent, it shall raise the matter with the joint interested copyright parties before the commencement of the verification procedure, and if the matter is not resolved, it may raise the issue with the American Institute of Certified Public Accountants' Professional Ethics Division and/or the verifying auditor's State Board of Accountancy while the verification procedure is being performed.

(2) A verifying auditor shall be considered qualified if he or she is a

certified public accountant or works under the supervision of a certified public accounting firm.

(3) A verifying auditor shall be considered independent if:

(i) he or she is independent as that term is used in the Code of Professional Conduct of the American Institute of Certified Public Accountants, including the Principles, Rules and Interpretations of such Code applicable generally to attest engagements (collectively, the "AICPA Code"); and (ii) he or she is independent as that term is used in the Statements on Auditing Standards promulgated by the Auditing Standards Board of the AICPA and Interpretations thereof issued by the Auditing Standards Division of the AICPA.

Dated: June 6, 1996.

Marybeth Peters,
Register of Copyrights.

Approved by:

James H. Billington,

The Librarian of Congress.

[FR Doc. 96-15390 Filed 6-17-96; 8:45 am]

BILLING CODE 1410-30-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD-FRL-5521-5]

RIN 2060-AD98

National Emission Standards for Hazardous Air Pollutants for Shipbuilding and Ship Repair (Surface Coating) Operations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: On December 15, 1995, the EPA issued national emission standards for hazardous air pollutants (NESHAP) under Section 112 of the Clean Air Act as amended in 1990 for shipbuilding and ship repair (surface coating) operations. The NESHAP requires existing and new major sources to control emissions using the maximum achievable control technology to control hazardous air pollutants. This action revises the compliance date for sources subject to this standard and revises the date for submittal of implementation plans. Specifically, this action extends the June 13, 1996 deadline for submittal of an implementation plan to December 16, 1996. The compliance date is extended from December 16, 1996 to December 16, 1997. This action is being taken because the EPA has learned that sufficient time was not provided to

prepare the implementation plans and establish the necessary inventory management systems to ensure compliance with the standard. This action is also being taken to improve coordination of compliance with the NESHAP with the anticipated implementation of the control techniques guidelines (CTG) requirements for shipbuilding and ship repair facilities.

This action also removes the requirement that implementation plans be approved by the EPA. This requirement is being removed because it was not EPA's intent for the implementation plan to be the mechanism for enforcing the rule.

DATES: The direct final rule will be effective August 19, 1996 unless significant, adverse comments are received by July 18, 1996. If the effective date is delayed, timely notice will be published in the Federal Register.

ADDRESSES: Comments should be submitted to: Air and Radiation Docket and Information Center (6102), Attention Docket Number A-92-11, Room M-1500, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: Dr. Mohamed Serageldin, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711, telephone number (919) 541-2379.

SUPPLEMENTARY INFORMATION:

Regulated Entities. The regulated category and entities affected by this action include:

Category	Examples of regulated entities
Industry	Facilities that build, repair, repaint, convert, or alter ships. The term ship means any marine or fresh-water vessel, including self-propelled vessels, those propelled by other craft (barges), and navigational aids (buoys). <i>Note:</i> An offshore oil and gas drilling platform is not considered a ship for purposes of this regulation.
Federal Govt ...	Federal Agencies which undertake shipbuilding or repair operations (see above) such as the Navy and Coast guards.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be

regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria in § 63.782 of the regulation. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Any significant and timely adverse comments received on any portion of this direct final rule will be addressed in a subsequent final rule based on the proposed rule contained in the Proposed Rules Section of this Federal Register that is identical to this direct final rule. If no significant and timely adverse comments are received on this direct final rule, then the direct final rule will become effective August 19, 1996 and no further action is contemplated on the parallel proposal published today.

I. Basis for Changes to Rule

A. Compliance Date

The EPA is extending the compliance date from December 16, 1996 to December 16, 1997 to allow time for sources to develop the necessary inventory management systems, administrative controls, and to allow coordination of compliance plans for this rule and the CTG, which is planned for publication in the near future. When the final NESHAP was issued, the EPA selected a one-year compliance period to allow time for sources to deplete existing inventories of coatings and to conduct compliance planning procedures. Since the final rule was issued on December 15, 1995, the EPA has learned that there are a number of companies subject to this rule that presently do not have inventory management systems necessary to ensure compliance, and that some facilities are relying on outside consultants to develop such systems. In such cases, at least one year is needed to establish the paint inventory management and administrative control system. Additionally, at the time the final NESHAP was issued, EPA expected to issue final guidance for the CTG for shipbuilding and ship repair (surface coating) operations in the near future. Issuance of this CTG has been delayed. Since control techniques for volatile organic compound emissions could affect the compliance approach selected for the NESHAP, the EPA believes that it is appropriate to extend

the compliance date for the NESHAP to allow coordination with rules adopted by States to implement the CTG. Based on the anticipated schedule for issuance of the CTG, the EPA believes that extension of the compliance date to December 16, 1997 should provide sufficient time to allow coordination of compliance planning for both the NESHAP and any applicable State rules.

B. Implementation Plan

The EPA is extending the June 13, 1996 deadline for submittal of implementation plans to December 16, 1996. The deadline for submitting these plans is being extended because the EPA has learned that sufficient time was not provided to prepare the implementation plans and establish the necessary paint inventory management and administrative control systems to ensure compliance with the standard. Because information available to the EPA during the development of the NESHAP suggested that most shipyards had some form of inventory management system, the EPA expected that 180 days should be sufficient to prepare the implementation plan. Due to information received from the industry since the final rule was issued, the EPA believes that one year is a more appropriate time-frame for selection of the compliance approach and development of the implementation plan. Therefore, this document revises the date for submittal of implementation plans to December 16, 1996.

This action also removes the requirement that implementation plans be approved by the EPA. This requirement is being eliminated since it was not the EPA's intent for the implementation plan to be the mechanism for enforcing the rule and, if the plans are subject to approval, some people might argue that was the role of the plan. The implementation plan will serve to provide guidance and assist in enforcement of the rule.

II. Administrative Requirements

A. Paperwork Reduction Act

The information collection requirements of the previously promulgated NESHAP were submitted to and approved by the Office of Management and Budget (OMB). A copy of this Information Collection Request (ICR) document (OMB number 1414.02) may be obtained from Sandy Farmer, Information Policy Branch (PM-223Y), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460 or by calling (202) 260-2740.

Today's changes to the NESHAP should have no impact on the

information collection burden estimates made previously. The change to the implementation plan requirements merely extends the date for submission of plans from existing sources. These changes do not impose new requirements. Consequently, the ICR has not been revised.

B. Executive Order 12866 Review

Under Executive Order 12866, the EPA must determine whether the proposed regulatory action is "not significant" and therefore, subject to OMB review and the requirements of the executive order. The Order defines "significant" regulatory action as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the executive order.

The Shipbuilding NESHAP promulgated on December 15, 1995 was determined to not be a "significant regulatory action" under Executive Order 12866. Therefore, a regulatory impact analysis was not prepared. The amendments issued today extend dates for submittal of implementation plans and the compliance date and remove the requirement for approval of implementation plans. These changes do not add any additional control requirements or costs. Therefore, this regulatory action does not affect the previous decision and is not considered to be significant.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 requires the identification of potentially adverse impacts of Federal regulations upon small business entities. The Act specifically requires the completion of a Regulatory Flexibility Analysis in those instances where small business impacts are possible. Because this rulemaking imposes no adverse economic impacts, a Regulatory Flexibility Analysis has not been prepared. Pursuant to Section 605(b) of the Regulatory Flexibility Act, 5 U.S.C. 605(b), the Administrator certifies that this rule will not have a

significant economic impact on a substantial number of small entities.

D. Submission to Congress and the General Accounting Office

Under section 801(a)(1)(A) of the Administrative Procedures Act (APA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's Federal Register. This rule is not a "major rule" as defined by section 804(2) of the APA as amended.

E. Unfunded Mandates

Under Section 202 of the Unfunded Mandates Reform Act of 1995, the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate; or to the private sector, of \$100 million or more. Under Section 205, the EPA must select the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that the action promulgated today does not include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. Therefore, the requirements of the Unfunded Mandates Reform Act do not apply to this action.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

Dated: June 7, 1996.
Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I, part 63, subpart II, of the Code of Federal Regulations is amended as follows:

PART 63—[AMENDED]

1. The authority citation for part 63 continues to read as follows:
Authority: 42 U.S.C. 7401, et seq.

Subpart II—National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)

2. Section 63.784 is amended by revising paragraph (a) to read as follows:

§ 63.784 Compliance dates.

(a) Each owner or operator of an existing affected source shall comply within two years after the effective date of this subpart.

* * * * *

3. Section 63.787 is amended by revising paragraphs (b)(1)(ii) and (b)(4) and by removing and reserving paragraph (b)(2) to read as follows:

§ 63.787 Notification requirements.

* * * * *

(b) * * *

(1) * * *

(ii) Not later than one year after the effective date of this subpart, submit the implementation plan to the Administrator along with the notification required by § 63.9(b)(2) or (b)(5) of subpart A, as applicable.

(2) [Reserved]

* * * * *

(4) Major sources that intend to become area sources by the compliance date. Existing major sources that intend to become area sources by the December 16, 1997 compliance date may choose to submit, in lieu of the implementation plan required under paragraph (b)(1) of this section, a statement that, by the compliance date, the major source intends to obtain and comply with federally enforceable limits on their potential to emit which make the facility an area source.

* * * * *

[FR Doc. 96-15439 Filed 6-17-96; 8:45 am]
BILLING CODE 6560-50-P

40 CFR Part 63

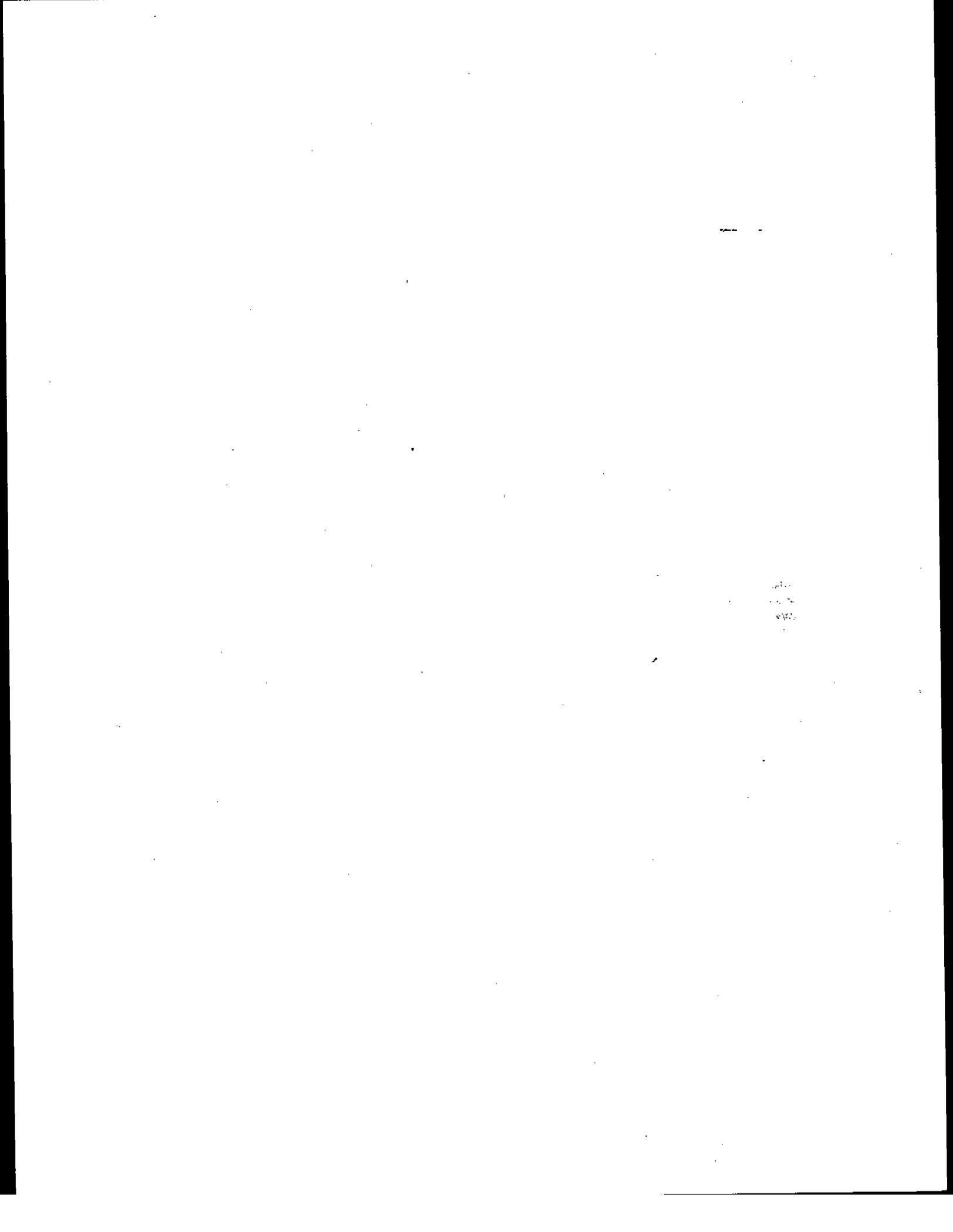
[AD-FRL-5520-5]

RIN 2060-AF33

Hazardous Air Pollutant List; Modification

AGENCY: Environmental Protection Agency (EPA).
ACTION: Final rule.

SUMMARY: The EPA is amending the list of hazardous air pollutants in Clean Air Act Section 112(b)(1) by removing the compound caprolactam (CAS No. 105-60-2). This rulemaking was initiated in response to a petition to delete the substance caprolactam which was filed by AlliedSignal, Inc., BASF Corporation, and DSM Chemicals North



(Authority: 20 U.S.C. 1145g)

6. In § 86.3 paragraphs (a) and (b) are amended by removing "for IHEs and §§ 86.200 and 86.201 for SEAs and LEAs".

7. Section 86.4 is amended by removing "(a) IHE drug prevention program certification." in paragraph (a) and by removing paragraphs (b) and (c).

8. Section 86.6 is amended by revising the heading; removing ", SEA, or LEA" both times it appears in paragraph (a), both times it appears in paragraph (b)(1), and in paragraph (b)(2); and revising paragraph (b)(3) to read as follows:

§ 86.6 When must an IHE submit a drug prevention program certification?

* * * * *

(b) * * *

(3) An IHE shall submit a request for an extension to the Secretary.

§ 86.7 [Amended]

9. Section 86.7 is amended by removing paragraph (a); redesignating paragraphs (b) and (c) as paragraphs (a) and (b), respectively; by removing "Local educational agency" and "State educational agency" from the list of terms in redesignated paragraph (a); and by removing ", SEA, or LEA" both times it appears in the definition of "Compliance agreement" in redesignated paragraph (b).

Subpart C—[Removed and Reserved]

10. Subpart C is removed and reserved.

Subpart D—[Amended]

11. The heading of Subpart D is amended by removing ", SEA, or LEA".

§ 86.300 [Amended]

12. Section 86.300 is amended by removing ", SEA, or LEA" in the heading, the undesignated introductory text, and paragraph (b) introductory text; and by removing "or by an SEA or LEA under §§ 86.200(c) and 86.201(a)" in paragraph (b)(2).

13. The authority citation following each section of the regulations is revised to read as follows:

(Authority: 20 U.S.C. 1145g)

[FR Doc. 96-31874 Filed 12-16-96; 8:45 am]

BILLING CODE 4000-01-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9 and 63

[AD-FRL-5601-7]

RIN 2060-AE02

RIN 2060-AD98

National Emission Standards for Hazardous Air Pollutants for Source Categories: Aerospace Manufacturing and Rework Facilities and Shipbuilding and Ship Repair (Surface Coating) Operations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; correction.

SUMMARY: This action corrects the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Aerospace Manufacturing and Rework Facilities and Shipbuilding and Ship Repair (Surface Coating) Operations promulgated in the Federal Register on September 1, 1995 (60 FR 45948) and December 15, 1995 (60 FR 64330), respectively. This action also announces that the Information Collection Requirements (ICR) contained in the NESHAP for Shipbuilding and Ship Repair (Surface Coating) Operations have been approved by the Office of Management and Budget (OMB).

EFFECTIVE DATE: December 17, 1996.

FOR FURTHER INFORMATION CONTACT: For information on the aerospace manufacturing and rework facilities standard contact Mr. James Szykman at (919) 541-2452, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. For information on the shipbuilding and ship repair (surface coating) standard contact Dr. Mohamed Serageldin at (919) 541-2379, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION: The Administrator is invoking the "good cause" exception of the Administrative Procedures Act, 5 U.S.C. 553(b)(3)(B), which allows an agency to promulgate rules without notice or the opportunity for comment when it finds that such procedures would be "impracticable, unnecessary, or contrary to the public interest." Following notice and comment procedures for this rule would be unnecessary because the changes effected here are only minor corrections that do not change the intended effect of the original rule. The Administrator is also invoking the good cause

provision to make this rule immediately effective upon its date of publication.

I. Shipbuilding and Ship Repair (Surface Coating)

The NESHAP for shipbuilding and ship repair (surface coating) operations was promulgated in the Federal Register on December 15, 1995 (60 FR 64330) as subpart II of 40 CFR Part 63.

The final rule contained (1) errors in numbering the incorporations by reference which were added to § 63.14; (2) improper punctuation in § 63.788(b)(3)(ii)(B); (3) a footnote to Table 2 of subpart II which incorrectly identified those coating categories that were not given cold-weather allowances; and (4) inappropriate use of the term "unaffected" major sources in § 63.788(b)(1). This action corrects these portions of the final rule. In addition, it amends the table in 40 CFR Part 9 of ICR control numbers issued by OMB for approved collections of information in certain EPA regulations. At the time of publication of the final rule, the EPA did not have an approved ICR control number to add to the table. The OMB subsequently approved the ICR for the final NESHAP, and the approved ICR control number (2060-0330) is being added to 40 CFR Part 9.

II. Aerospace Manufacturing and Rework Facilities

The NESHAP for aerospace manufacturing and rework facilities was promulgated in the Federal Register on September 1, 1995 (60 FR 45948). A document of correction to the final rule was published in the Federal Register on February 9, 1996 (61 FR 4902) which corrected the deadline for existing sources to submit an initial notification to the Administrator.

The amendatory language for this final rule correction inadvertently referenced paragraph (a)(1) instead of referencing paragraph (a)(2) of Section 63.753. The amendatory language should have read, "Section 63.753 is amended by adding a new sentence to the beginning of paragraph (a)(2) as follows:" This document includes the applicable language to make this correction.

Administrative Requirements

I. Paperwork Reduction Act

The information collection requirements of the previously promulgated NESHAP were submitted to and approved by the Office of Management and Budget (OMB). A copy of the Information Collection Request (ICR) documents (OMB number 1414.02 and 1687.01, for shipbuilding and

aerospace, respectively) may be obtained from Sandy Farmer, Information Policy Branch (PM-223Y); U.S. Environmental Protection Agency; 401 M Street, SW; Washington, DC 20460 or by calling (202) 260-2740.

Today's changes to the NESHAP should have no impact on the information collection burden estimates made previously.

II. Executive Order 12866 Review

Under Executive Order 12866, the EPA must determine whether the proposed regulatory action is "not significant" and therefore, subject to OMB review and the requirements of the executive order. The Order defines "significant" regulatory action as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the executive order.

The Shipbuilding NESHAP promulgated on December 15, 1995 was determined to not be a "significant regulatory action" under Executive Order 12866. The Aerospace NESHAP promulgated on September 1, 1995 has been determined to be a "significant regulatory action" under Executive Order 12866. The amendments issued today do not add any additional control requirements or costs. Therefore, this regulatory action does not affect the previous decisions and is not considered to be significant.

III. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, the EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of the rule in today's Federal Register. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

IV. Unfunded Mandates

Under Section 202 of the Unfunded Mandates Reform Act of 1995, the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate; or to the private sector, of \$100 million or more. Under Section 205, the EPA must select the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that the action promulgated today does not include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector.

Therefore, the requirements of the Unfunded Mandates Reform Act do not apply to this action.

List of Subjects

40 CFR Part 9

Reporting and recordkeeping requirements.

40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Dated: August 22, 1996.
Mary D. Nichols,
Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, Title 40, Chapter I of the Code of Federal Regulations is amended as follows:

PART 9—[AMENDED]

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 et seq., 136-136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601-2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 et seq., 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9, 1857 et seq., 6901-6992k, 7401-7671q, 7542, 9601-9657, 11023, 11048.

2. Section 9.1 is amended by adding the new entries under the indicated heading to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act

40 CFR citation	OMB control No.
National Emission Standards for Hazardous Air Pollutants for Source Categories ³	
63.5(d)	2060-0330
63.787 (a)-(b)	2060-0330
63.788 (a)-(c)	2060-0330

³ The ICRs referenced in this section of the Table encompass the applicable general provisions contained in 40 CFR Part 63, subpart A, which are not independent information collection requirements.

PART 63—[AMENDED]

3. The authority citation for Part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

4. Section 63.14 is amended by redesignating paragraphs (b)(4) through (b)(14) added on December 15, 1995 at 60 FR 64336 as paragraphs (b)(8) through (b)(18).

Subpart GG—National Emission Standards for Aerospace Manufacturing and Rework Facilities

5. Section 63.753 is amended by adding a new sentence to the beginning of paragraph (a)(2) to read as follows:

§ 63.753 Reporting requirements.

- (a)(1) * * *
- (2) The initial notification for existing sources, required in § 63.9(b)(2) shall be submitted no later than September 1, 1997. * * *

Subpart II—National Emission Standards for Shipbuilding and Ship Repair (Surface Coating) Operations

6. Section 63.788 is amended to revise the first sentence of paragraph (b)(1) as follows:

§ 63.788 Recordkeeping and Reporting Requirements.

- (b) * * *
- (1) Each owner or operator of a major source shipbuilding or ship repair facility having surface coating operations with less than 1000 liters (L) (264 gallons (gal)) annual marine

coating usage shall record the total volume of coating applied at the source to ships. * * *

7. Table 2 to Subpart II of Part 63, footnote (e) is revised as follows:

Table 2 to Subpart II of Part 63.—
Volatile Organic HAP (VOHAP)
Limits for Marine Coatings

These limits apply during cold-weather time periods, as defined in § 63.782. Cold-weather allowances are not given to coatings in categories that permit less than 40 percent volume solids (nonvolatiles). Such coatings are subject to the same limits regardless of weather conditions.

[FR Doc. 96-31344 Filed 12-16-96; 8:45 am]
BILLING CODE 6560-50-P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MM Docket No. 96-121; RM-8806 and RM-8820]

Radio Broadcasting Services; Forestville and Algoma, WI

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: Action in this proceeding allots Channel 271A to Forestville, Wisconsin, as that community's first local service in response to a petition filed by Lyle Robert Evans d/b/a The Radio Company. See 61 FR 30585, June 17, 1996. The coordinates for Channel 271A at Forestville are 44-45-54 and 87-28-48. There is a site restriction 8.5 kilometers (5.3 miles) north of the community. In response to the counterproposal filed by WTRW, Incorporated, we shall allot Channel 281A to Algoma, Wisconsin, without a site restriction. The coordinates for Channel 281A are 44-36-18 and 87-26-12. Since Algoma and Forestville are both located within 320 kilometers (200 miles) of the U.S.-Canadian border, concurrence of the Canadian government has been obtained for both channels. With this action, this proceeding is terminated.

DATES: Effective January 27, 1997. The window period for filing applications for Channel 2271A at Forestville, Wisconsin, and Channel 281A at Algoma, Wisconsin, will open on January 27, 1997, and close on February 27, 1997.

FOR FURTHER INFORMATION CONTACT: Kathleen Scheuerle, Mass Media Bureau, (202) 418-2180.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, MM Docket No. 96-121, adopted December 6, 1996, and released December 13, 1996. The full text of this Commission decision is available for inspection and copying during normal business hours in the Commission's Reference Center (Room 239), 1919 M Street, NW, Washington, D.C. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Services, Inc., 2100 M Street, N.W., Suite 140, Washington, D.C. 20037, (202) 857-3800.

List of Subjects in 47 CFR Part 73

Radio broadcasting.
Part 73 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 73—[AMENDED]

1. The authority citation for Part 73 continues to read as follows:

Authority: Secs. 303, 48 Stat., as amended, 1082; 47 U.S.C. 154, as amended.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments under Wisconsin, is amended by adding Channel 281A at Algoma and by adding Forestville, Channel 271A.

Federal Communications Commission.

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 96-31937 Filed 12-16-96; 8:45 am]
BILLING CODE 6712-01-P

47 CFR Part 73

[MM Docket No. 96-37; RM-8765]

Radio Broadcasting Services; Sylvan Beach, NY

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission, at the request of Michael S. Celenza, allots Channel 262A to Sylvan Beach, NY, as the community's first local aural service. See 61 FR 10977, March 18, 1996. Channel 262A can be allotted to Sylvan Beach in compliance with the Commission's minimum distance separation requirements without the imposition of a site restriction, at coordinates 43-11-47 NL; 75-43-51 WL. Canadian concurrence in the

allotment has been received since Sylvan Beach is located within 320 kilometers (200 miles) of the U.S.-Canadian border. With this action, this proceeding is terminated.

DATES: Effective January 17, 1997. The window period for filing applications will open on January 17, 1997, and close on February 18, 1997.

FOR FURTHER INFORMATION CONTACT: Leslie K. Shapiro, Mass Media Bureau, (202) 418-2180.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Report and Order, MM Docket No. 96-37, adopted November 22, 1996, and released November 29, 1996. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 1919 M Street, NW, Washington, D.C. The complete text of this decision may also be purchased from the Commission's copy contractor, International Transcription Service, Inc., (202) 857-3800, 2100 M Street, N.W., Suite 140, Washington, D.C. 20037.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Part 73 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 73—[AMENDED]

1. The authority citation for Part 73 continues to read as follows:

Authority: Secs. 303, 48 Stat., as amended, 1082; 47 U.S.C. 154, as amended.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments under New York, is amended by adding Sylvan Beach, Channel 262A.

Federal Communications Commission

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 96-31936 Filed 12-16-96; 8:45 am]
BILLING CODE 6712-01-P

47 CFR Part 73

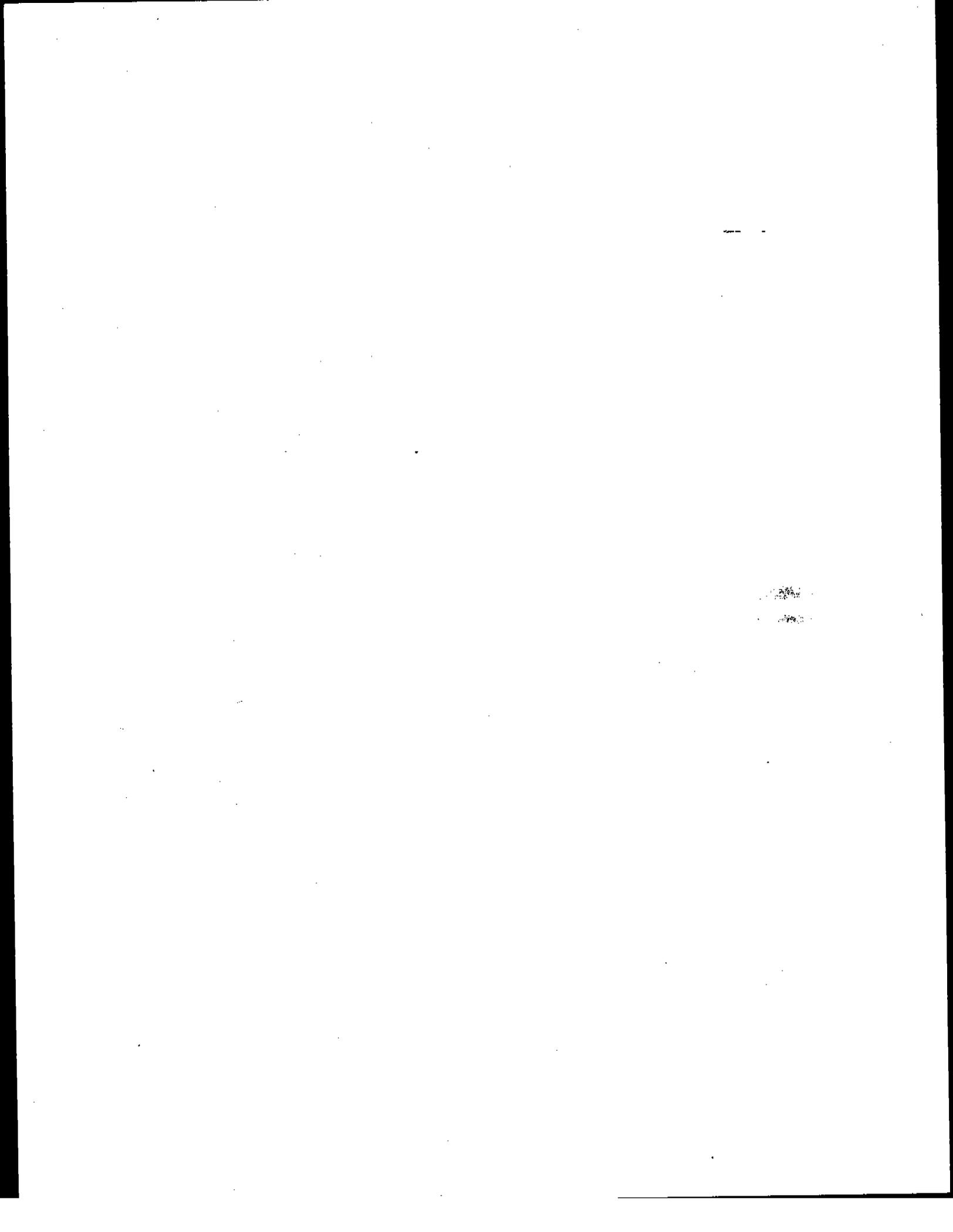
[MM Docket No. 95-175; RM-8707]

Radio Broadcasting Services; Ada, Newcastle and Watonga, Oklahoma

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission, at the request of Tyler Broadcasting Corporation, reallots Channel 227C1



APPENDIX B
GLOSSARY OF TERMS

Terms used in the NESHAP and in this Guidebook are defined in the Clean Air Act (Act), or in this section as follows:

Add-on control system means an air pollution control device such as a carbon absorber or incinerator that reduces pollution in an air stream by destruction or removal prior to discharge to the atmosphere.

Affected source means any shipbuilding or ship repair facility having surface coating operations with a minimum 1,000 liters (L) (264 gallons [gal]) annual marine coating usage.

Air flask specialty coating means any special composition coating applied to interior surfaces of high pressure breathing air flasks to provide corrosion resistance and that is certified safe for use with breathing air supplies.

Antenna specialty coating means any coating applied to equipment through which electromagnetic signals must pass for reception or transmission.

Antifoulant specialty coating means any coating that is applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and that is registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act.

As applied means the condition of a coating at the time of application to the substrate, including any thinning solvent.

As supplied means the condition of a coating before any thinning, as sold and delivered by the coating manufacturer to the user.

Batch means the product of an individual production run of a coating manufacturer's process. (A batch may vary in composition from other batches of the same product.)

Bitumens mean black or brown materials that are soluble in carbon disulfide, which consist mainly of hydrocarbons.

Bituminous resin coating means any coating that incorporates bitumens as a principal component and is formulated primarily to be applied to a substrate or surface to resist ultraviolet radiation and/or water.

Certify means, in reference to the volatile organic compound (VOC) content or volatile organic hazardous air pollutant (VOHAP) content of a coating, to attest to the VOC content as determined through analysis by Method 24 of appendix A to part 60 of title 40 of the Code of Federal Regulations

(40 CFR 60) or through the use of forms and procedures outlined in Figure 5-2, or to attest to the VOHAP content as determined through an EPA approved test method. In the case of conflicting results, Method 24 of Appendix A to 40 CFR Part 60 shall take precedence over the forms and procedures outlined in Figure 5-2 for the options in which VOC is used as a surrogate for VOHAP.

Coating means any material that can be applied as a thin layer to a substrate and which cures to form a continuous solid film.

Cold-weather time period means any time during which the ambient temperature is below 4.5°C (40°F) and coating is to be applied.

Container of coating means the container from which the coating is applied, including but not limited to a bucket or pot.

Cure volatiles means reaction products that are emitted during the chemical reaction which takes place in some coating films at the cure temperature. These emissions are other than those from the solvents in the coating and may, in some cases, comprise a significant portion of total VOC and/or VOHAP emissions.

Epoxy means any thermoset coating formed by reaction of an epoxy resin (i.e., a resin containing a reactive epoxide with a curing agent).

Exempt compounds means specified organic compounds that are not considered VOC due to negligible photochemical reactivity. Exempt compounds are specified in 40 CFR §51.100(s).

Facility means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

General use coating means any coating that is not a specialty coating.

Hazardous air pollutant (HAP) means any air pollutant listed in or pursuant to Section 112(b) of the CAA.

Heat resistant specialty coating means any coating that during normal use must withstand a temperature of at least 204°C (400°F).

High-gloss specialty coating means any coating that achieves at least 85 percent reflectance on a 60 degree meter when tested by ASTM Method D-523.

High-temperature specialty coating means any coating that during normal use must withstand a temperature of at least 426°C (800°F).

Inorganic zinc (high-build) specialty coating means a coating that contains 960 grams per liter (8 pounds per gallon) or more elemental zinc incorporated into an inorganic silicate binder that is applied

to steel to provide galvanic corrosion resistance. (These coatings are typically applied at more than 2 mil dry film thickness.)

Major source means any source that emits or has the potential to emit in the aggregate 9.1 megagrams per year (10 tons per year) or more of any HAP or 22.7 megagrams per year (25 tons per year) or more of any combination of HAP.

Maximum allowable thinning ratio means the maximum volume of thinner that can be added per volume of coating without violating the applicable VOHAP limit (see Table 2-1).

Military exterior specialty coating or Chemical Agent Resistant Coatings ("CARC") means any exterior topcoat applied to military or U.S. Coast Guard vessels that are subject to specific chemical, biological, and radiological washdown requirements.

Mist specialty coating means any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the paint film prior to curing.

Navigational aids specialty coating means any coating applied to Coast Guard buoys or other Coast Guard waterway markers when they are recoated aboard ship at their usage site and immediately returned to the water.

Nonskid specialty coating means any coating applied to the horizontal surfaces of a marine vessel for the specific purpose of providing slip resistance for personnel, vehicles, or aircraft.

Nonvolatiles (or volume solids) means substances that do not evaporate readily. This term refers to the film-forming material of a coating.

Normally closed means a container or piping system is closed unless an operator is actively engaged in adding or removing material.

Nuclear specialty coating means any protective coating used to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusion by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure (ASTM D4082-83), relatively easy to decontaminate (ASTM D4256-83), and resistant to various chemicals to which the coatings are likely to be exposed (ASTM 3912-80). [For nuclear coatings, see the general protective requirements outlined by the U.S. Atomic Energy Commission in a report entitled "U.S Atomic Energy Commission Regulatory Guide 1.54" dated June 1973, available through the Government Printing Office at (202) 512-2249 as document number A74062-00001.]

Operating parameter value means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

Organic zinc specialty coating means any coating derived from zinc dust incorporated into an organic binder that contains more than 960 grams of elemental zinc per liter (8 pounds per gallon) of coating, as applied, and that is used for the expressed purpose of corrosion protection.

Pleasure craft means any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 20 meters in length. A vessel rented exclusively to or chartered for individuals for such purposes shall be considered a pleasure craft.

Pretreatment wash primer specialty coating means any coating that contains a minimum of 0.5 percent acid, by mass, and is applied only to bare metal to etch the surface and enhance adhesion of subsequent coatings.

Repair and maintenance of thermoplastic coating of commercial vessels (specialty coating) means any vinyl, chlorinated rubber, or bituminous resin coating that is applied over the same type of existing coating to perform the partial recoating of any in-use commercial vessel. (This definition does not include coal tar epoxy coatings, which are considered "general use" coatings.)

Rubber camouflage specialty coating means any specially formulated epoxy coating used as a camouflage topcoat for exterior submarine hulls and sonar domes.

Sealant for thermal spray aluminum means any epoxy coating applied to thermal spray aluminum surfaces at a maximum thickness of 1 dry mil.

Ship means any marine or fresh-water vessel used for military or commercial operations, including self-propelled vessels, those propelled by other craft (barges), and navigational aids (buoys). This definition includes, but is not limited to, all military and Coast Guard vessels, commercial cargo and passenger (cruise) ships, ferries, barges, tankers, container ships, patrol and pilot boats, and dredges. Pleasure crafts and offshore oil and gas drilling platforms are not considered ships.

Shipbuilding and ship repair operations means any building, repair, repainting, converting, or alteration of ships.

Special marking specialty coating means any coating that is used for safety or identification applications, such as markings on flight decks and ships' numbers.

Specialty coating means any coating that is manufactured and used for one of the specialized applications described within this list of definitions.

Specialty interior coating means any coating used on interior surfaces aboard U.S. military vessels pursuant to a coating specification that requires the coating to meet specified fire retardant and low toxicity requirements, in addition to the other applicable military physical and performance requirements.

Tack specialty coating means any thin film epoxy coating applied at a maximum thickness of 2 dry mils to prepare an epoxy coating that has dried beyond the time limit specified by the manufacturer for the application of the next coat.

Thinner means a liquid that is used to reduce the viscosity of a coating and that evaporates before or during the cure of a film.

Thinning ratio means the volumetric ratio of thinner to coating, as supplied.

Thinning solvent: see Thinner.

Undersea weapons systems specialty coating means any coating applied to any component of a weapons system intended to be launched or fired from under the sea.

Volatile organic compound (VOC) means any organic compound that participates in atmospheric photochemical reactions; that is, any organic compound other than those that the Administrator designates as having negligible photochemical reactivity. VOC is measured by a reference method, an equivalent method, an alternative method, or by procedures specified under any regulation. A reference method, an equivalent method, or an alternative method, however, may also measure nonreactive organic compounds. In such cases, any owner or operator may exclude the nonreactive organic compounds when determining compliance with a standard. For a list of compounds that the Administrator has designated as having negligible photochemical reactivity, refer to 40 CFR 51.00.

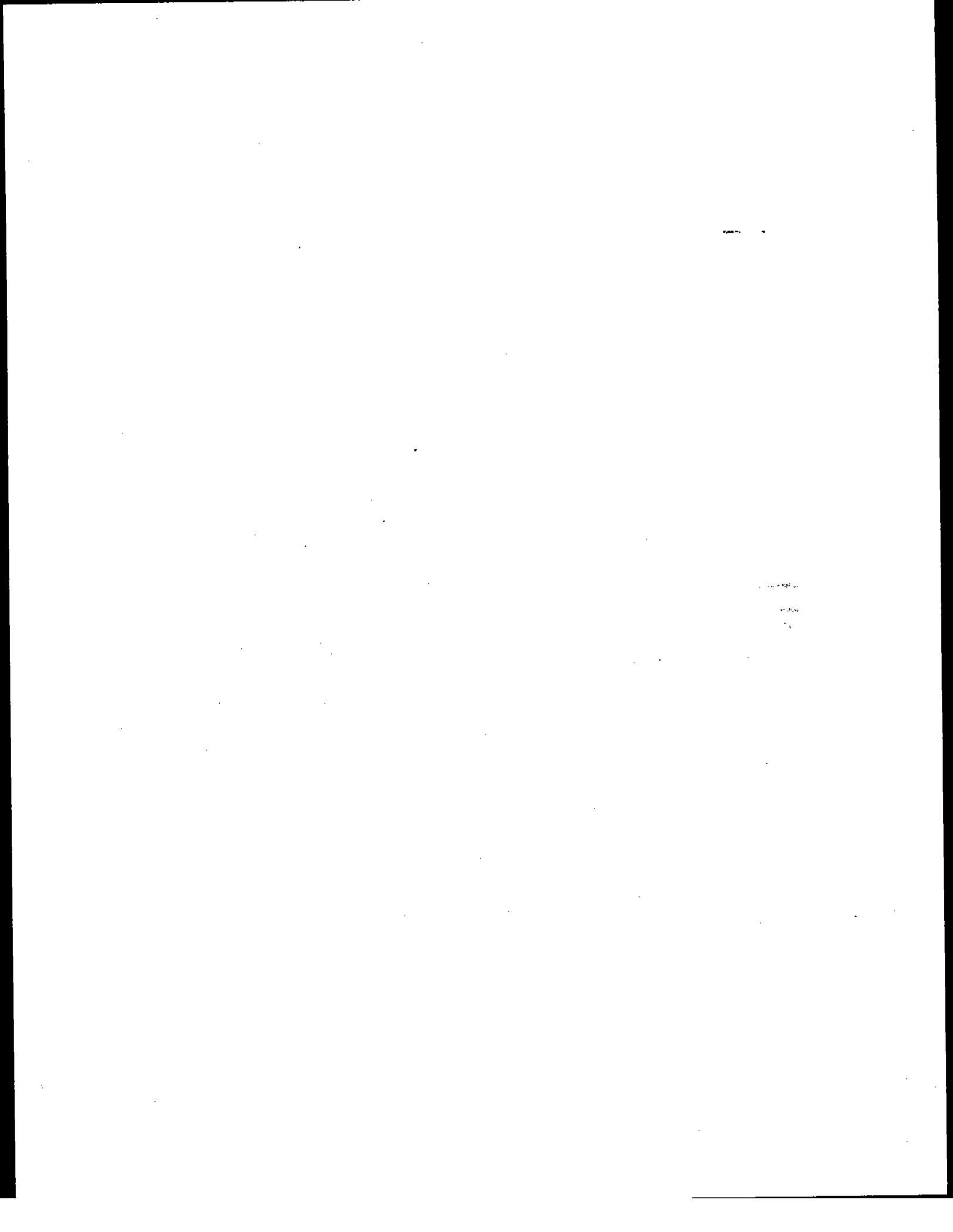
Volatile organic hazardous air pollutant (VOHAP) means any compound listed in or pursuant to section 112(b) of the Act that contains carbon, excluding metallic carbides and carbonates. This definition includes VOC listed as HAP and exempt compounds listed as HAP.

Weld-through preconstruction primer (specialty coating) means a coating that provides corrosion protection for steel during inventory, is typically applied at less than 1 mil dry film thickness, does not require removal prior to welding, is temperature resistant (burn back from a weld is less than 1.25 centimeters [0.5 inches]), and does not normally require removal before applying film-building coatings, including inorganic zinc high-build coatings. When constructing new vessels, there may be a need to

remove areas of weld-through preconstruction primer due to surface damage or contamination prior to application of film-building coatings.

APPENDIX C

**LIST OF ESTIMATED NESHAP
MAJOR-SOURCE SHIPYARDS**



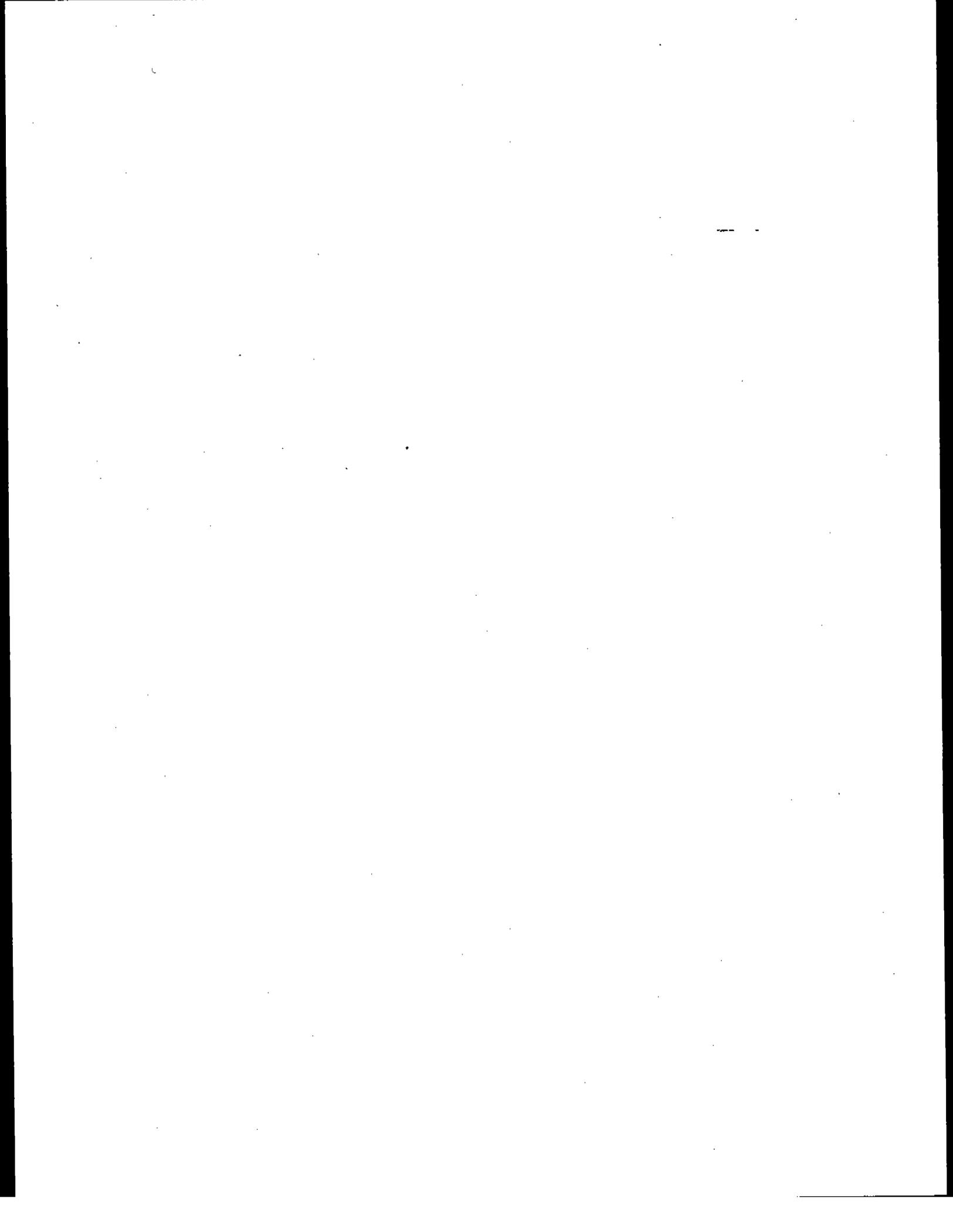
U.S. SHIPYARDS ESTIMATED TO BE NESHAJ MAJOR SOURCES^a

Type	Shipyard	Location	Workforce
Large Construction (6)	Jeffboat	Jeffersonville, IN	700
	Ingalls	Pascagoula, MS	16,700
	NNS	Newport News, VA	26,000
	General Dynamics (Electric Boat)	Groton, CT	15,300
	Bath Iron Works	Bath, ME	5,900
	Avondale	New Orleans, LA	7,200
Large Repair (4)	West State, Inc. ^b	Portland, OR	800
	Norshipco	Norfolk, VA	3,000
	Norfolk Naval	Norfolk, VA	11,300
	Portland Ship Repair	Portland, OR	2,000
Medium Construction (8)	Equitable Yards (Halter Marine)	New Orleans, LA	600
	Moss Point Marine (Halter Marine)	Escatawpa, MS	450
	NASSCO	San Diego, CA	4,000
	BethShip	Sparrows Point, MD	700
	McDermott Inc.	Amelia, LA	800
	Bollinger	Lockport, LA	740
	Gretna Machine (Halter Marine)	Harvey, LA	150
	Platzer	Houston, TX	200
Medium Repair (17)	Todd Shipyards	Seattle, WA	850
	Lockport Shipyard (Halter Marine)	Lockport, LA	350
	Philadelphia Naval ^b	Philadelphia, PA	7,100
	Northwest Marine ^b	Portland, OR	800
	Southwest Marine ^c	San Diego, CA	1,500
	Southwest Marine (San Francisco Drydock) ^c	San Francisco, CA	350
	Bender	Mobile, AL	900
	Gunderson, Inc.	Portland, OR	1,000
	Tampa Shipyards	Tampa, FL	1,100
	Madisonville (Halter Marine)	Madisonville, LA	?
	Bethlehem Steel	Port Arthur, TX	250
	Halter Marine - Plant #84	???, LA	?
	Newpark	Houston, TX	260
(4) Nonspecified	???	?	

^aBased on survey responses, Marine Log listing of U.S. Shipyards (June 1992), American Waterways Shipyard Conference (AWSC) handbook, comments from industry representatives, and State permit data. (Also, see related memoranda to project file and project WAM: documents II-B-24, IV-A-05, 06, and 07 in shipbuilding docket No. A-92-11.)

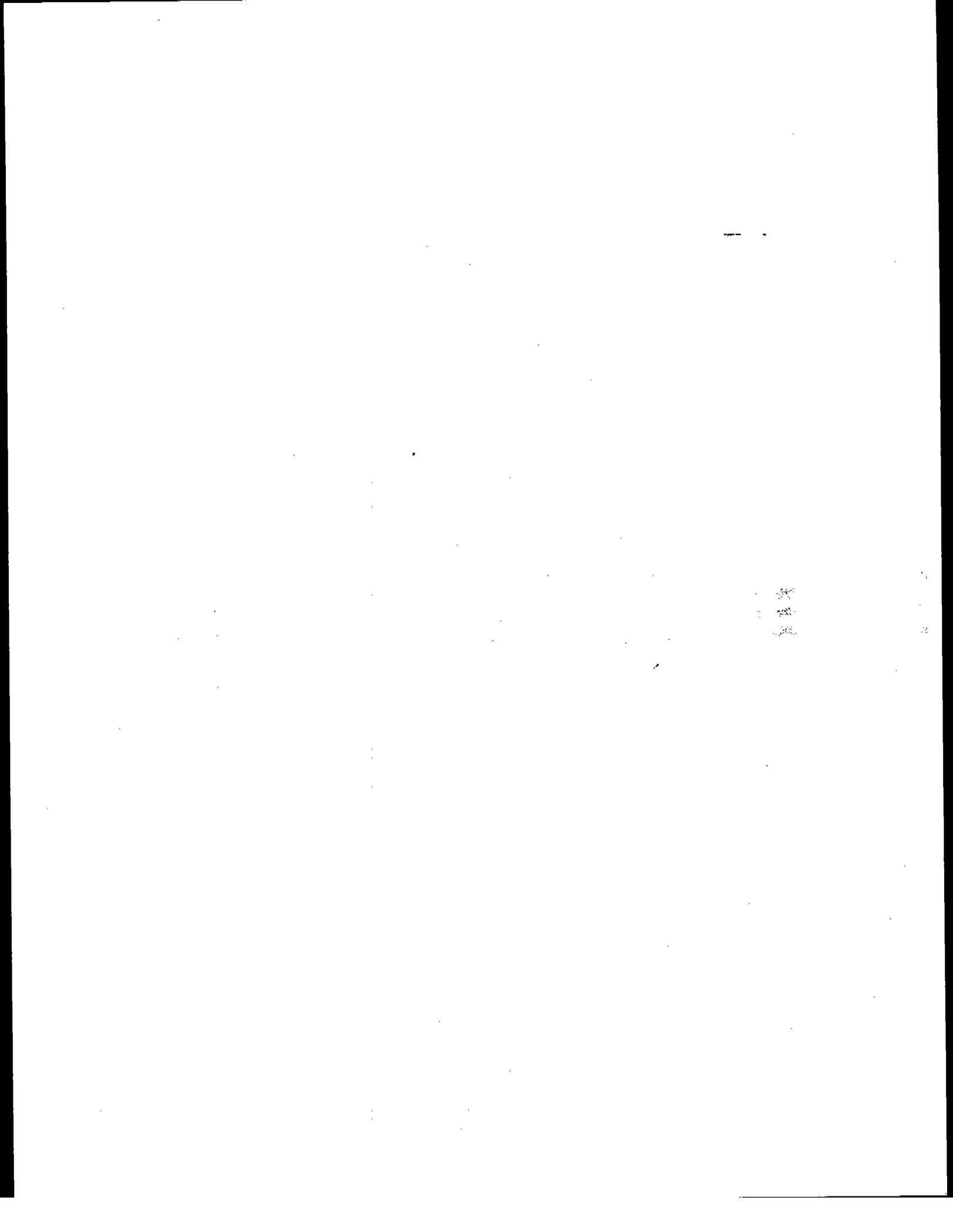
^bPer D. Austin's 10/27/96 comments, these facilities are closed/out-of-business.

^cPer D. Austin's 10/27/96 comments, these facilities have been determined to be area sources.



APPENDIX D

EXAMPLE INITIAL NOTIFICATION





NATIONAL STEEL AND SHIPBUILDING COMPANY

July 8, 1996

EPA Region IX
Director, Air and Radiation Division
75 Hawthorne St.
San Francisco, CA 94105

RE: 40 CFR PART 63, SUBPART II
National Emission Standards for Shipbuilding and Ship Repair
(Surface Coating)

Dear Sir:

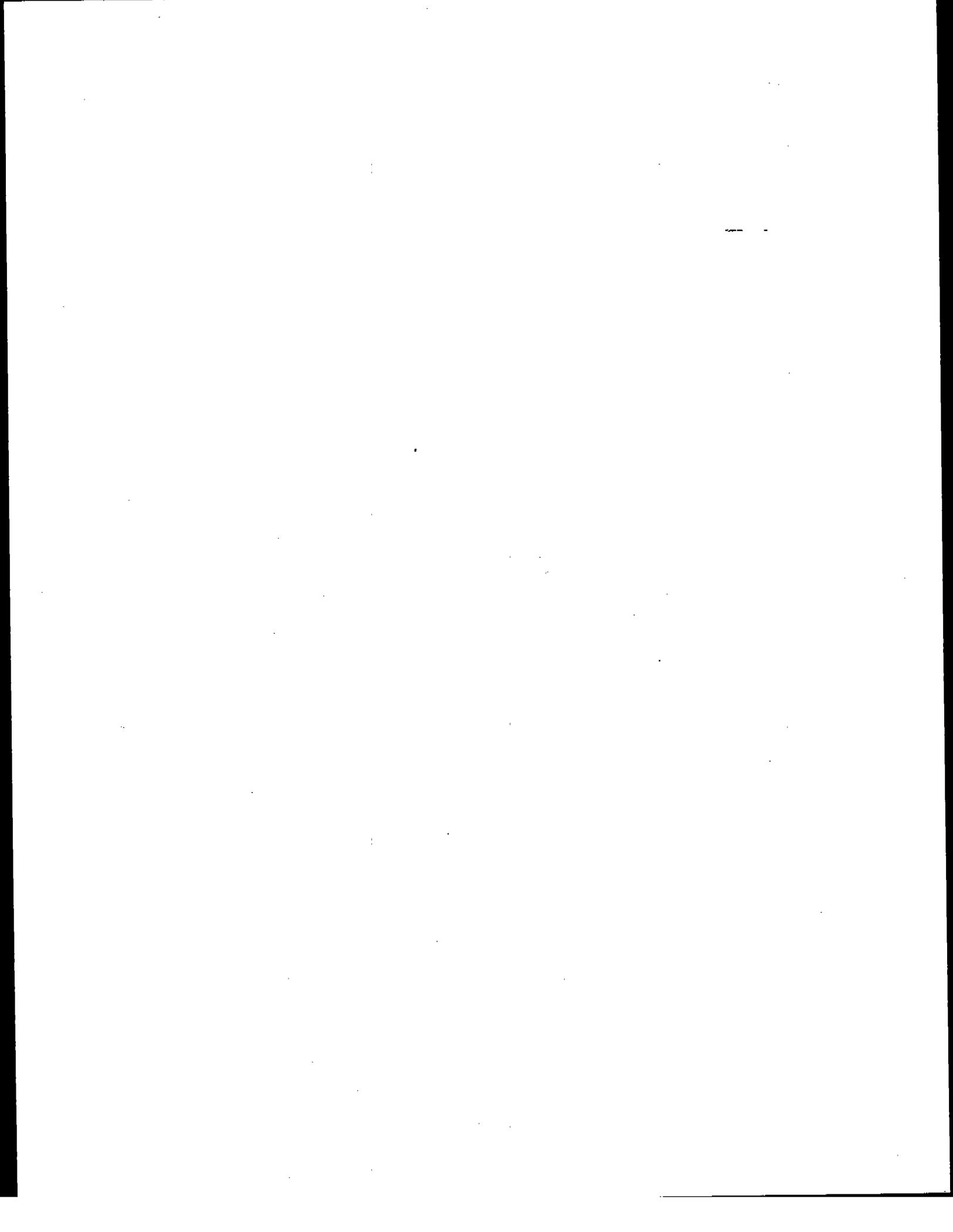
This is to notify you that National Steel & Shipbuilding Co. at Harbor Dr. and 28th St., San Diego, CA currently has a potential to emit of hazardous air pollutants (HAPs) in amounts greater than 25 tons per year of all combined HAPs and 10 tons per year of an individual HAP. As a result of our coating operations, National Steel & Shipbuilding Co. is, therefore, classified as a "major" source for hazardous air pollutants and is subject to the requirements of the National Emission Standards for Shipbuilding and Ship Repair (Surface Coating) Maximum Achievable Control Technology (MACT). We understand that the new submittal date for the implementation plan is December 16, 1996 and that the new compliance date is December 16, 1997.

Sincerely,

NATIONAL STEEL & SHIPBUILDING CO.

Dan Buell
Environmental Engineering Specialist

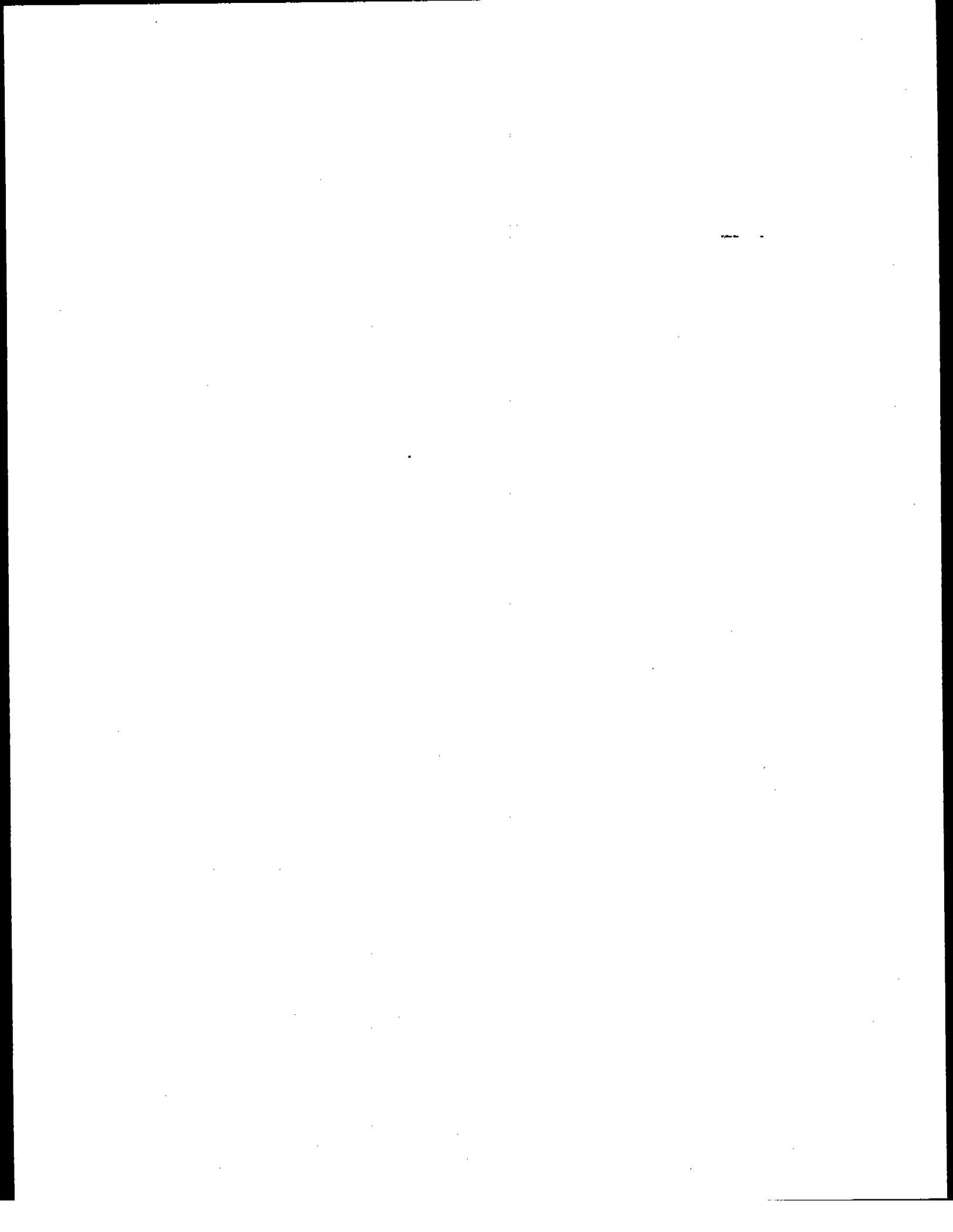
HARBOR DRIVE AND 28TH STREET • SAN DIEGO, CA 92113 • P.O. BOX 85278 • SAN DIEGO, CA 92186-5278
TELEPHONE (619) 544-3400 • TWX (910) 335-1250 • TELEX 695034



APPENDIX E

EXAMPLE IMPLEMENTATION PLAN

The following "Shipyard MACT Implementation Plan" was prepared by Mr. Dana Austin of Austin Environmental, Inc. for NSRP, Task N1-92-2, Subtask 12.





AOK SHIPYARDS
The Best in the West

SHIPYARD MACT IMPLEMENTATION PLAN

April 1996

Prepared for:
John Smith
US EPA Region XXX
123 Elm Street
Anytown, USA 98765-1234

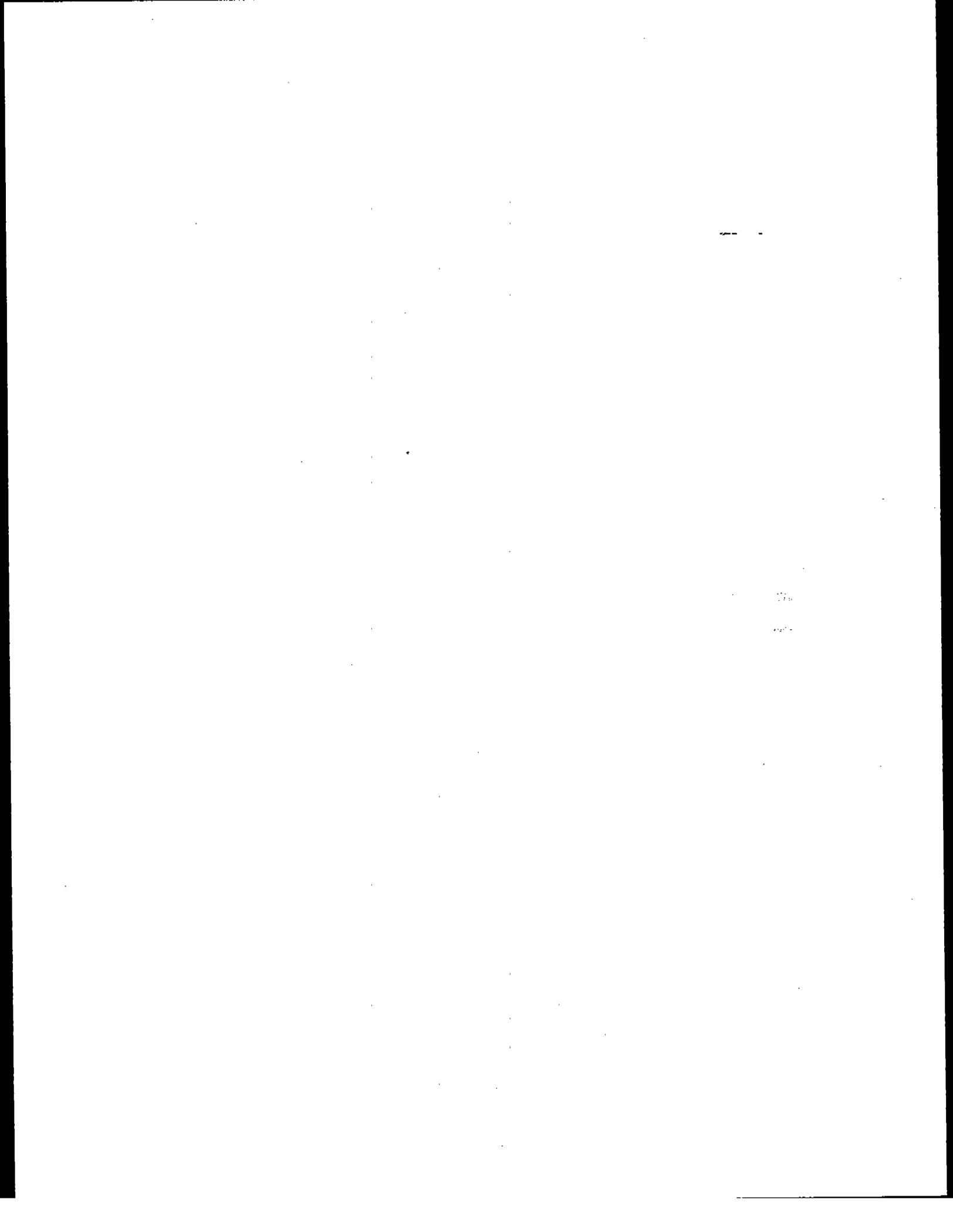


Table of Contents

1.	COATING COMPLIANCE PROCEDURES	1
1.0	COATING IDENTIFICATION AND CERTIFICATION	2
1.0.1	Coating Identification	2
1.0.2	VOC or VOHAP Content Above Limit	2
1.0.3	Unknown VOC Content	3
1.0.4	Container Inspection	3
1.1	OPTION 1 and OPTION 4	4
1.1.1	Certification	4
1.1.2	Notification	4
1.2	OPTION 2, OPTION 3 and OPTION 4	4
1.2.1	Calculation of Thinning Ratios	4
1.2.2	Notification	7
1.2.3	Paint Crew Daily Records	7
1.2.4	Thinner Group Designation "By Use"	7
1.2.5	Determination of Compliance	8
2.	RECORD KEEPING PROCEDURES	8
3.	TRANSFER, HANDLING, AND STORAGE PROCEDURES	9
3.0	Work Practices	9
3.1	Self-Inspection	10
APPENDIX A: FORMS		12
PAINT CREW USAGE FORM		14
CONTAINER COMPLIANCE FORM		15
METHOD 24 TEST RESULTS FORM		16

PAINT AND THINNER USAGE LOG 17

NO THINNING LABEL 18

MAXIMUM ALLOWABLE THINNING LABEL 19

CALCULATION SHEET (SIDE 1) FOR OPTIONS 2 AND 3 20

CALCULATION SHEET (SIDE 2) 22

APPENDIX B: MARINE COATING DATA SHEETS 23

VOC DATA SHEET 24

VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS . . 26

SHIPYARD MACT MARINE COATING EXPRESSIONS AND EQUATIONS . 27

40 CFR 51.100 (s) - EXEMPT COMPOUNDS 28

APPENDIX C: COATING DEFINITIONS 29

1. COATING COMPLIANCE PROCEDURES

AOK Shipyards intends to implement the following option(s) in compliance with 40 CFR §63:

- Option 1 - No thinning solvent added
- Option 2 - Thinning solvent added, Coating-by-coating compliance
- Option 3 - Thinning solvent added, Thinner group compliance
- Option 4 - Alternative test method (i.e., other than Method 24)

Our approach to ensure MACT compliance is to integrate the additional requirements into existing work practices and to assign responsibilities to the appropriate organizational level in the company. Fig. 1-1 presents a cross reference matrix identifying organizational elements and their involvement in MACT implementation.

**Fig. 1-1
Organizations Performing MACT Compliance Activities**

MACT Compliance Activity		Initial Review	Receipt of Coatings	Certification	Dilution Calculations	Inspection	Mixing	Application	Reporting	Records	Testing
Option(s)		All	All	All	2, 3 & 4	All	2, 3 & 4	All	All	All	All
Organization	Purchasing	X								X	
	Receiving		X	X		X				X	X
	Environmental				X				X	X	X
	Paint Dept.			X						X	
	Paint Crew					X	X	X		X	

1.0 COATING IDENTIFICATION AND CERTIFICATION (ALL OPTIONS)

1.0.1 Coating Identification

Coating identification will be made in conjunction with the existing normal business activities required for the receipt of goods within the facility. Specifically, the warehouseman, receiving clerk, paint foreman, or other designated person will be responsible for determination of the coating category¹ and VOHAP limit of each batch of coating received into the facility. This will be accomplished using information gathered from the company purchase order, bills of lading, and/or coating container labels. This information will be recorded on the *Coating Compliance Certification* form.²

[This activity meets the requirements of 40 CFR §63.785(a)(1) and -(2)]

1.0.2 VOC or VOHAP Content Above Limit

For its specific coating category, any batch of coating with an identified VOC or VOHAP content above the limit shown in the form will be rejected and returned to the supplier, customer, or government.

[This activity meets the requirements of 40 CFR §63.783(a)]

Identification codes for the categories prescribed in 40 CFR §63.783 are as follows:

G1	General use	S8	Military exterior	S15	Repair/ maintenance of thermoplastics
S1	Air flask	S9	Mist	S16	Rubber camouflage
S2	Antenna	S10	Navigational aids	S17	Sealant for thermal spray aluminum
S3	Antifoulant	S11	Nonskid	S18	Special marking
S4	Heat resistant	S12	Nuclear	S19	Specialty interior
S5	High-gloss	S13	Organic zinc	S20	Tack coat
S6	High-temperature	S14	Pretreatment wash primer	S21	Undersea weapons systems
S7	Inorganic zinc high-build			S22	Weld-through precoat primer

Forms are located in *Appendix A, Forms*.

1.0.3 Unknown VOC Content

The Purchasing Supervisor will be notified if the VOC content of any batch of coating cannot be identified. At his discretion, The Purchasing Supervisor may reject the batch and return it to the supplier, customer, or government; or, provisionally accept the batch pending further analysis using Method 24. If Method 24 tests are performed, the test results will be recorded on the *Method 24 Test Results Log* form.

[This activity meets the requirements of 40 CFR §63.783(a) and §63.788(b)(2)(vi)]

1.0.4 Container Inspection

We plan to use direct inspection of every equipment item (e.g., container, drum, vessel, vat, tank, pipe, etc.) involved in coating application to determine its integrity (see Section 3.1, *Self Inspection*). As applied to coating identification and certification, this involves at least receiving personnel, the Paint Shop Foreman, the Paint Crew Lead Men, and the Environmental personnel.

[This activity meets the requirements of 40 CFR §63.783(b)]

The warehouseman, receiving clerk, paint foreman, or other designated person will be responsible for inspecting the containers as received and completing the *Container Compliance* form for the receiving activity. Leaking containers or equipment will be identified and handled according to company spill handling procedures. The paint shop personnel will reinspect containers delivered for each day's activities, and inspect paint mixing, handling, and application equipment items. Any discrepancies will be reported to the Paint Shop Foreman, who will alert the spill response teams and/or maintenance crews to take appropriate action.

We will document these findings on the *Container Compliance* form, which will serve as a permanent record of ongoing inspections.

[This activity meets the requirements of 40 CFR §63.788(b)(2)(vi)]

1.1 OPTION 1 and OPTION 4

1.1.1 Certification

The Paint Department foreman, leadman, or supervisor will certify VOC (VOHAP) content "as-applied" prior to application of the work site using the *Coating Compliance Certification* form. This form will be returned to the Paint Department clerk, foreman, or supervisor at the end of the work shift.

[This activity satisfies the requirements of 40 CFR §63.785(c)(1)(I)]

Additionally, the volume of coating applied during the shift will be recorded by the paint crew foreman at the end of the work shift using the *Paint Crew Usage* form. Likewise, this form will be returned to the Paint Department clerk, foreman, or supervisor at the end of the work shift for recording in the *Paint and Thinner Usage Log*.

1.1.2 Notification

The Paint Department clerk, foreman, or company Environmental manager will maintain MACT compliance by notification of painters of the designated thinners by use of labels. The "No Thinning" label, will be used for this purpose. Alternatively, when use of labels is not practical or warranted, paint department gang box meetings, held prior to each work shift, will be used to notify painters that no thinning is allowed.

[This activity satisfies the requirements of 40 CFR §63.785(c)(1)(ii)]

FOR OPTION 4:

where:

R = Maximum allowable thinning ratio for a given batch
(L thinner/L coating as supplied);

V_s = Volume fraction of solids in the batch as supplied
(L solids/L coating as supplied);

VOHAP limit = Maximum allowable as-applied VOHAP content of
the coating (g VOHAP/L solids);

m_{VOHAP} = VOHAP content of the batch as supplied. [g VOHAP
(including cure volatiles and exempt compounds on
the HAP list)/L coating (including water and exempt
compounds) as supplied];

$D_{\text{th(VOHAP)}}$ = Average density of the VOHAP thinner(S) (g/L).

Thinning Ratio Calculation Sheets for both Options 2 and 3, and Option 4 are provided in Appendix B.

Note: If V_s is not supplied directly by the coating manufacturer, V_s both Option 2 and Option 3, and Option 4 calculations will be determined using equation 2 as given by the MACT:

$$V_s = 1 - \frac{m_{\text{volatiles}}}{D_{\text{avg}}} \quad \text{Eqn.}$$

where:

$m_{\text{volatiles}}$ = Total volatiles in the batch, including VOC, water, and exempt
compounds (g/L coating), and

D_{avg} = Average density of volatiles in the batch (g/L).

1.2 OPTION 2, OPTION 3 and OPTION 4

1.2.1 Calculation of Thinning Ratios

The Paint Department clerk, foreman, or environmental manager will maintain MACT compliance by preparing required information on marine coatings to ensure compliance with MACT standards, including

- (i) VOC Data Sheets, and
- (ii) Thinning Ratio Calculations

The *VOC Data Sheet*, will be used to record the properties of marine coatings or thinners "As-Supplied." Note that this form accounts for exempt compounds and cure volatiles omitted from the VOC Data Sheet when the MACT was published, but necessary to complete the calculations. The *VOC Data Sheet* and attachments are provided as Appendix B.

Thinning ratio calculations will be completed before the application of each batch, using the equation 1, as provided in the MACT:

FOR OPTION 2 and OPTION 3:

where:

R = Maximum allowable thinning ratio for a given batch
(L thinner/L coating as supplied);

V_s = Volume fraction of solids in the batch as supplied
(L solids/L coating as supplied);

VOHAP limit = Maximum allowable as-applied VOHAP content of the coating (g VOHAP/L solids);

m_{voc} = VOC content of the batch as supplied. [g VOC (including cure volatiles and exempt compounds on the HAP list)/L coating (including water and exempt compounds) as supplied];

D_{th} = Density of the thinner (g/L).

1.2.2 Notification

The Paint Department clerk, foreman, or company Environmental manager will maintain MACT compliance by notification of painters of the designated thinners by use of labels. The "*Maximum Allowable Thinning Ratio*" label, will be used for this purpose. Alternatively, when use of labels is not practical or warranted, paint department gang box meetings, held before each work shift, will be used to notify painters that no thinning is allowed.

[This activity satisfies the requirements of 40 CFR §63.785(c)(2)(ii) and -(3)(ii)]

1.2.3 Paint Crew Daily Records

The paint crew foreman, leadman, or supervisor will be responsible for recording the ambient temperature, the actual volumes used for each coating, the total allowable thinner volume, and the actual volume of thinner used. This form will be returned to the Paint Department clerk, foreman, or supervisor at the end of the work shift for recording in the *Paint and Thinner Usage Log*.

[This activity meets the requirements of 40 CFR §63.785(c)(2)(iii), and -(3)(iii)]

1.2.4 Thinner Group Designation "By Use"

The coatings grouped with a particular thinner will be determined "by use," i.e., if a thinner is used with a particular coating during the monthly reporting period, then that coating has been "designated" to that thinner group.

[This activity meets the requirements of 40 CFR §63.785(c)(3)(I)]

1.2.5 Determination of Compliance

At the end of each calendar month, the Paint Department clerk will provide the master coating and thinner usage log to the designated responsible person, who will determine compliance for that period. MACT compliance determination under Options 2 and 3 will be completed for the previous month by the 15th day of each month. The data will be evaluated using Equation 3 of the Rule, as follows:

$$V_{th} = \sum_{i=1}^n (R \times V_b)_i + \sum_{i=1}^n (R_{cold} \times V_{b-cold})_i \quad \text{Eqn.}$$

where:

- V_{th} = Total allowable volume of thinner for the previous month (L thinner);
- V_b = Volume of each batch, as supplied and before being thinned, used during non-cold-weather days of the previous month (L coating as supplied);
- R_{cold} = Maximum allowable thinning ratio for each batch used during cold-weather days (L thinner/L coating as supplied);
- V_{b-cold} = Volume of each batch, as supplied and before being thinned, used during cold-weather days of the previous month (L coating as supplied);
- I = Each batch of coating; and
- n = Total number of batches of the coating.

[This activity meets the requirements of 40 CFR §63.785(c)(2)(iii), -(2)(iv), -(2)(v), -(2)(vi), (3)(iv), -(3)(v), -(3)(vi), and -(3)(vii).]

2. RECORD KEEPING PROCEDURES

The Paint Department clerk, foreman, and environmental manager will maintain all MACT compliance RECORD KEEPING information, including the information listed below, as required for each Option used during the reporting period. Records will be maintained for five years. Reporting will be provided before the 60th day following completion of each 6-month period after the compliance date. (Note: Some RECORD KEEPING items are not reported.)

BASIC CHECKLIST

- Initial Notification Documentation *
 - Approved Implementation Plan *
 - Volume of Low-Usage -Exempt Coatings by Month
 - Identification of coatings used, EPA categories, and VOHAP limits
 - Certification of As-Supplied VOC Content for each Batch of Coating *
 - Determination whether containers meet standard §63.783(b)(2)
 - Results of Method 24 or other approved measurements on individual containers
-

OPTIONS	1 & 4	2 & 4	3 & 4
<input type="checkbox"/> Certification of As-Applied VOC content by Batch *	X		
<input type="checkbox"/> Volume of each coating applied	X		
<input type="checkbox"/> Thinner Density and Vol Fraction Solids for each Batch*		X	X
<input type="checkbox"/> Maximum Allowable Thinner Ratio for each Batch		X	X
<input type="checkbox"/> Volume Used of each Batch, (As-Supplied)		X	X
<input type="checkbox"/> Cold weather dates and times		X	X
<input type="checkbox"/> Total Allowable Volume of thinner		X	X
<input type="checkbox"/> Actual Volume of thinner		X	X
<input type="checkbox"/> ID of coating groups/thinner			X

* Maintained on site but not reported.

[This activity satisfies the requirements of 40 CFR §63.788]

3. TRANSFER, HANDLING, AND STORAGE PROCEDURES

Our company management policy takes a proactive role in the development of measures to minimize the likelihood for air pollution. We therefore develop procedures, practices, and equipment on an ongoing basis. The sections below discuss our policy with respect to work practices, and to self-inspection, respectively.

3.0 Work Practices

Regarding the transfer and handling of VOHAP-containing materials in a way that minimizes spills, the following elements of our policy are of particular relevance:

- (1) Maintain a neat and orderly work environment including storing hazardous materials and wastes in a way that minimizes the potential for accidental releases.
- (2) Keep lids on liquid volatile material containers when not directly in use.
- (3) Practice clean up procedures to ensure that accidentally spilled solvents and paints are cleaned-up immediately.
- (4) Store solvent contaminated rags, cloths, and materials in a covered container.
- (5) Keep drums closed when not in use and equip drums with tight-fitting lids.
- (6) Use funnels when filling and replace the cap covering the hole once filling is completed (or replace the funnel's lid, if used).
- (7) Dispose of solvent-wipe rags immediately in a covered container.
- (8) Apply the volatile solvents directly to the rag and avoid spraying solvent directly on the surface.
- (9) Avoid the use of VOCs for surface preparation whenever possible (i.e., substitute aqueous cleaners where possible).
- (10) Maintain paint guns and pots to minimize the potential for leaks and improper spraying. (See also section 3.1, *Self-Inspection*, below.)
- (11) Clean lines or paint guns in a closed system to capture solvents.
- (12) Provide containment for VOC-containing material storage areas.
- (13) Perform mixing and transfer operations only in designated areas with containment.

[This activity meets the requirements of 40 CFR §63.783(b)(1)]

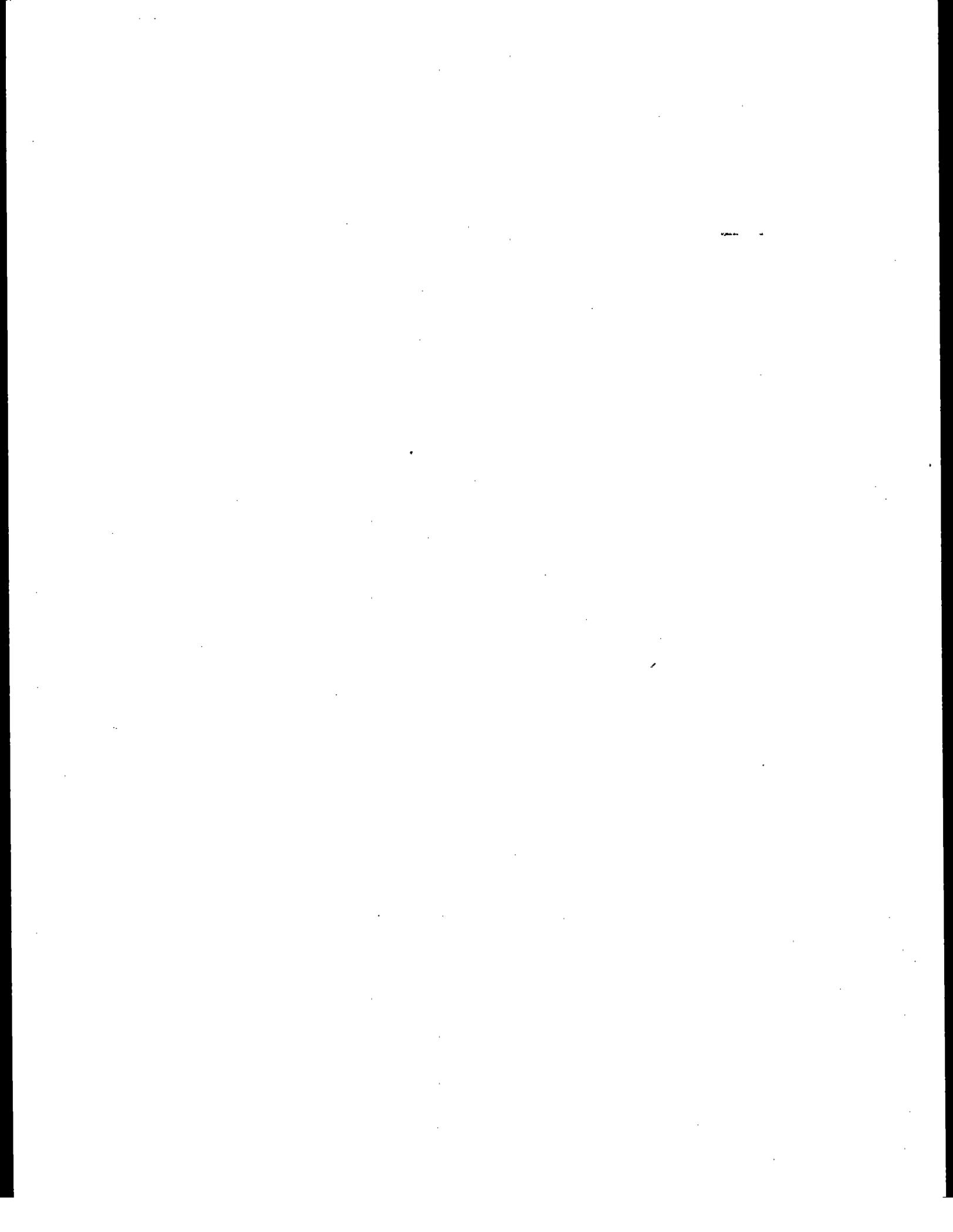
3.1 Self-Inspection

Our facility policy already prescribes reactions to malfunctions and/or leaks both by maintenance crews and by spill response teams. There are existing notification protocols to alert the appropriate response organization. Effectively, we use self-inspection of every equipment item (e.g., container, drum, vessel, vat, tank, pipe, etc.) involved in coating application to determine its integrity. This strategy is executed for every activity and every organizational level associated with coating materials and thinning solvents, from initial receipt within the facility to final application.

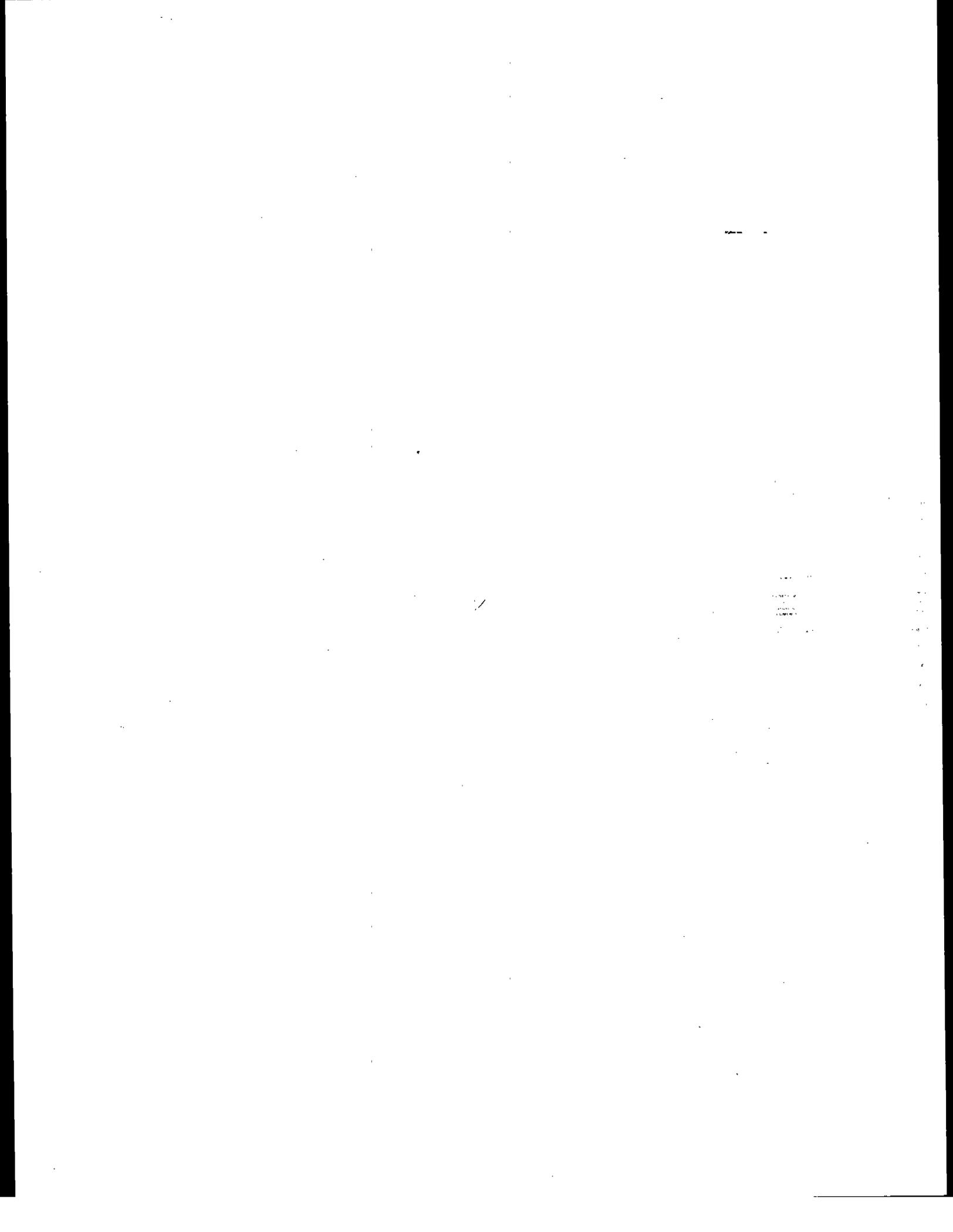
[These policies and procedures meet the requirements of 40 CFR §63.783(b)(2).]

For compliance with MACT RECORD KEEPING requirements, we plan to document container self-inspection findings on the *Container Compliance* Form. This form will serve as a permanent record, and will be maintained for a minimum of 5 years.

[This activity assures compliance with 40 CFR §63.788(b)(2)(vi).]



Attachment A: FORMS



A-OK SHIPYARDS COATING COMPLIANCE CERTIFICATION

AS SUPPLIED

AS APPLIED

ID	Item	Description	Data
A.	Coating	Name/ Identification	
B.	Coating Manufacturer	Name	
C.	Batch Identification	Count/Volume	
D.	Supplied By	Source (check one)	<input type="checkbox"/> Customer <input type="checkbox"/> Manufacturer <input type="checkbox"/> Government
E.	VOC Content	Concentration, g/L	
		Source (check one)	<input type="checkbox"/> Batch test data (M-24) <input type="checkbox"/> VOC Data Sheet
F.	Coating Category (check one below)	Code	VOC Limit, grams/liter coating
		Description	
	General	<input type="checkbox"/> G1 General use	340
	Specialty	<input type="checkbox"/> S1 Air flask	340
		<input type="checkbox"/> S2 Antenna	530
		<input type="checkbox"/> S3 Antifoulant	400
		<input type="checkbox"/> S4 Heat resistant	420
		<input type="checkbox"/> S5 High-gloss	420
		<input type="checkbox"/> S6 High-temperature	500
		<input type="checkbox"/> S7 Inorganic zinc high-build	340
		<input type="checkbox"/> S8 Military exterior	340
		<input type="checkbox"/> S9 Mist	610
		<input type="checkbox"/> S10 Navigational aids	550
		<input type="checkbox"/> S11 Nonskid	340
		<input type="checkbox"/> S12 Nuclear	420
		<input type="checkbox"/> S13 Organic zinc	360
		<input type="checkbox"/> S14 Pretreatment wash primer	780
		<input type="checkbox"/> S15 Repair/ maintenance of thermoplastics	550
		<input type="checkbox"/> S16 Rubber camouflage	340
		<input type="checkbox"/> S17 Sealant for thermal spray aluminum	610
		<input type="checkbox"/> S18 Special marking	490
		<input type="checkbox"/> S19 Specialty interior	340
		<input type="checkbox"/> S20 Tack coat	610
		<input type="checkbox"/> S21 Undersea weapons systems	340
<input type="checkbox"/> S22 Weld-through precon. primer		650	
G.	I certify that the VOC content of this product is less than or equal to the allowable federal VOC content for its applicable coating category. Signed _____ Date _____		

A-OK SHIPYARDS PAINT CREW USAGE FORM

MONTH OF _____

JOB ID _____ CREW ID _____ DATE _____

Requirement	Activity	Item***	Description	Value
MACT	COATING (Complete Before Work)	(1)	Mfg. Name	
		(2)	ID	
		(3)	Batch	
		(4)	EPA Category (Note 1)	
		(5)	VOC Limit	
	THINNER (Complete Before Work)	(6)	Manufacturer's Name	
		(7)	ID	
		(8)	Mix Ratio, Normal	
		(9)	Mix Ratio, Cold	
		(10)	Actual Coating Volume	
	MIXING	(11)	Allowable Thinner Vol, Normal	
		(12)	Allowable Thinner Vol, Cold	
		(13)	Actual Thinner Volume	
		(14)	Temperature <40°F (Y/N)	
		(15)	Actual Temp (°F)	
		(16)	Final Volume (Note 2)	
		(17)	Volume Applied	
CERTIFICATION	(21)	Date		
	(22)	By		

Note 1: EPA Coating Categories are identified below:

General

G1 General Use

Specialty

S1 Air flask

S2 Antenna

S3 Antifoulant

S4 Heat resistant

S5 High-gloss

S6 High-temperature

S15 Repair/ maintenance of thermoplastics

S16 Rubber camouflage

S17 Sealant for thermal spray aluminum

S18 Special marking

S19 Specialty interior

S20 Tack coat

S21 Undersea weapons systems

From Paint and Thinner Usage Log

- S7 Inorganic zinc high-build
- S8 Military exterior
- S9 Mist
- S10 Navigational aids
- S11 Nonskid
- S12 Nuclear
- S13 Organic zinc
- S14 Pretreatment wash primer

S22 Weld-through precon. primer
Note 2: (16) = (10) + (12)

Maximum Allowable Thinning Label

Maximum Allowable Thinning Ratio	
Ratio	Normal (≥ 40 °F) _____ Cold (< 40 °F) _____
Thinner	USE NO SUBSTITUTES ⁽¹⁾ Mfg. Name _____ Product ID _____ Use no more than _____ gal thinner per gallon paint.
⁽¹⁾ In compliance with 40 CFR Part 63.785. Contact Paint Foreman or _____.	

NO THINNING LABEL

NO THINNING

In compliance with 40 CFR Part 63.785.
Contact Paint Foreman or _____.

A	Coating	Batch Number
		Manufacturer
		ID
		Category
B	Thinner	Manufacturer
		ID

8 Enter line 7a: Use no more than _____ gallons thinner per gallon coating for normal temperatures.

Enter line 7b: Use no more than _____ gallons thinner per gallon coating for cold temperatures.

**MARINE COATING ALLOWABLE THINNING RATIO
CALCULATION SHEET (SIDE 1) FOR
OPTIONS 4**

A	Coating	Batch Number _____ Manufacturer _____ ID _____ Category _____
B	Thinner	Manufacturer _____ ID _____

Step	Instructions (Use VOC data collection sheet for this batch of coating)	Calculations
1	Enter V_s the volume fraction solids in the batch, as supplied, (liter solid/ liter coating) on lines 1a and 1b.	1a _____ % 1b _____ %
2	Enter VOHAP LIMIT , for normal and for cold operation, based on the coating category (see side 2)	$t \geq 4.5^\circ\text{C}$ $t < 4.5^\circ\text{C}$ 2a _____ 2b _____
3	Multiply line 1a times line 2a and enter the results on line 3a. Multiply line 1b times line 2b and enter the results on line 3b.	3a _____ 3b _____
4	Enter the VOHAP content, grams/liter, of the batch on lines 4a and 4b. <i>Note: VOHAP content was determined using EPA approved test method:</i>	4a _____ 4b _____
5	Subtract line 4a from 3a and enter results on line 5a. Subtract line 4b from 3b and enter result on line 5b. STOP if negative. See Supervisor.	5a _____ 5b _____
6	Enter $D_{thvohap}$ the average Density of the VOHAP Thinners, grams/liter, on lines 6a and 6b.	6a _____ 6b _____
7	Divide line 5a by line 6a and enter result on line 7a . Divide line 5b by line 6b and enter result on line 7b.	R_N R_C 7a _____ 7b _____
8	Enter line 7a: Use no more than _____ gallons thinner per gallon coating for normal temperatures. Enter line 7b: Use no more than _____ gallons thinner per gallon coating for cold temperatures.	

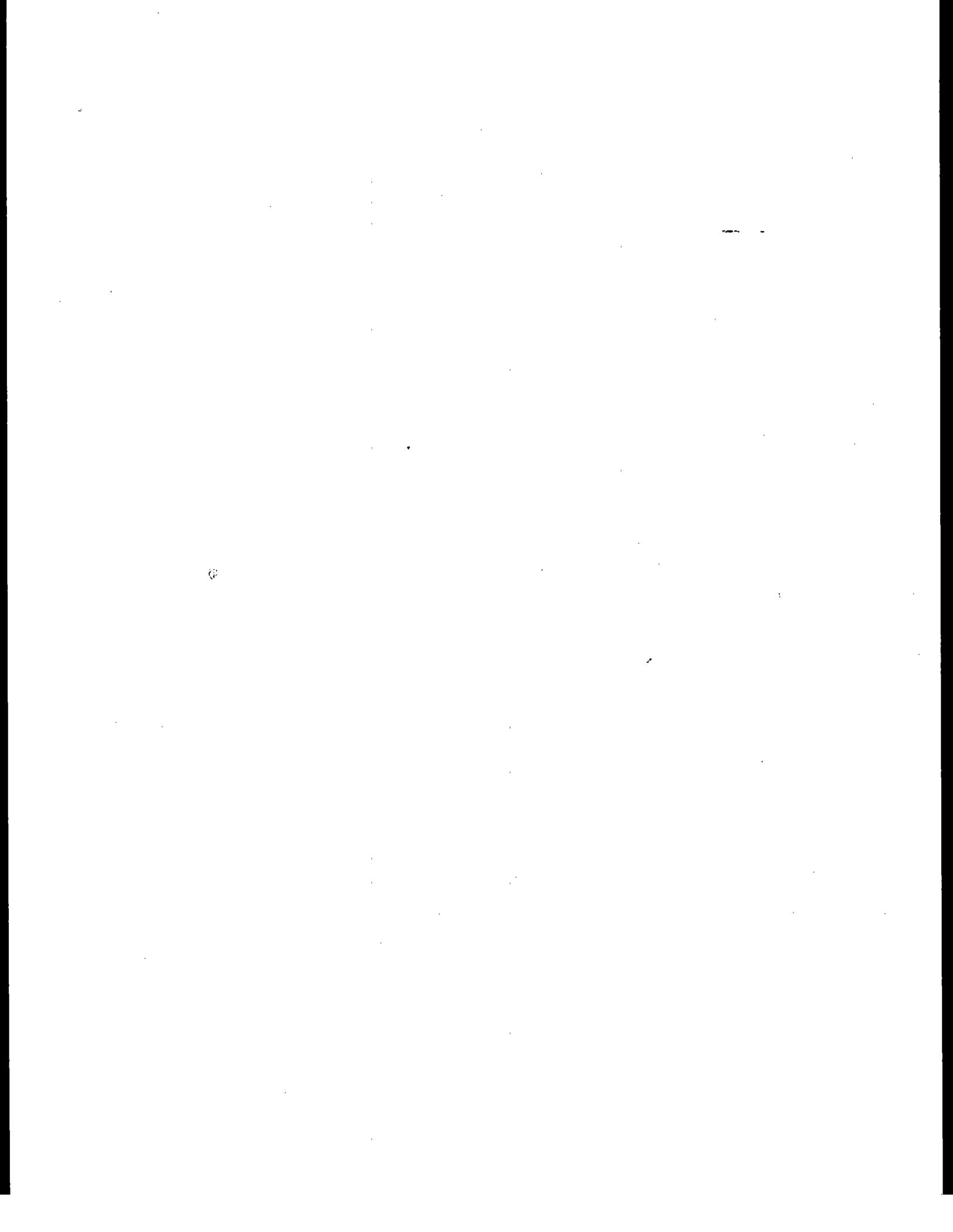
**MARINE COATING ALLOWABLE THINNING RATIO
CALCULATION SHEET (SIDE 2)**

Coating Category:		VOHAP limits grams/liter solids	
		t ≥ 4.5°C	t < 4.5°C
General	G1 General use	571	728
Specialty	S1 Air flask	571	728
	S2 Antenna	1,439	--
	S3 Antifoulant	765	971
	S4 Heat resistant	841	1,069
	S5 High-gloss	841	1,069
	S6 High-temperature	1,237	1,597
	S7 Inorganic zinc high-build	571	728
	S8 Military exterior	571	728
	S9 Mist	2,235	--
	S10 Navigational aids	1,597	--
	S11 Nonskid	571	728
	S12 Nuclear	841	1,069
	S13 Organic zinc	630	802
	S14 Pretreatment wash primer	11,095	--
	S15 Repair and maintenance of thermoplastics	1,597	--
	S16 Rubber camouflage	571	728
	S17 Sealant for thermal spray aluminum	2,235	--
	S18 Special marking	1,178	--
	S19 Specialty interior	571	728
	S20 Tack coat	2,235	--
	S21 Undersea weapons systems	571	728
	S22 Weld-through precon. primer	2,885	--

Note: To convert from g/L to lb/gal, multiply by (3.785 L/gal)(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.

Note: Cold-weather allowances are not given to coatings in categories that permit over a 40 percent VOHAP content by volume. Such coatings are subject to the same limits regardless of weather conditions.

**Attachment B:
MARINE COATING
DATA SHEETS**



VOC DATA SHEET

PROPERTIES OF THE MARINE COATING OR THINNER "AS SUPPLIED" BY THE MANUFACTURER

Manufacturer: _____ Product Identification: _____

Is this product a coating or thinner? COATING _____ THINNER _____

If product is a coating or paint please provide the information in the box below and provide all information for Items A through J below:

MACT Coating Category: General Use _____ or Specialty Coating _____
If Coating is a Specialty Coating please list the specific Category type(s) below. (Use attached list of marine coating specialty categories):

If the product is thinner or reducer, please provide the information requested in Items D through J below:

Properties of the coating or thinner as supplied to the customer:

- A. Coating Density: (D_c) _____ g/L [] ASTM D1475-90 [] Other
- B. Total Volatiles: (M_v) _____ Mass Percent [] ASTM D2369-93 [] Other
- C. Cure Volatiles Content: (C_{cv}) _____ g/L [] Calculated [] Other
- D. Organic Volatiles: (M_o) _____ Mass Percent [] Calculated [] Other
- E. Water Content:
1. (M_w) _____ Mass Percent [] ASTM D3792-91 [] ASTM D4017-90 [] Other
2. (V_w) _____ Volume Percent [] Calculated [] Other
- F. Exempt Compounds Content: (C_{ex}) _____ g/L [] Calculated [] Other
- G. Nonvolatiles: (V_s) _____ Volume Percent [] Calculated [] Other
- H. VOC Content (VOC):
1. _____ g/L solids (nonvolatiles)
2. _____ g/L coating (less water and exempt compounds)
- I. Thinner Density: (D_{th}) _____ g/L ASTM _____ [] Other

J. Coating Speciation: Provide the percentage of each chemical component of this coating or thinner. (If only a percentage range can be supplied, the range mean will be used to calculate VOC and HAP emissions.) This information is not required for compliance with the shipyard MACT, however other federal and/or state environmental regulations require this data. By providing this information now it will avoid the possibility that the shipyard will make redundant requests for the data in the future.

COATING OR THINNER COMPONENT

MASS PERCENTAGE

Nonvolatile Components, Water and Exempt Compounds

1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____

Organic Volatile Components:

1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____

Signed: _____

Dated: _____

--English units in the original submittal were deleted to conform with Appendix A in the final regulation (60 FR 64330).

Shipyard MACT Marine Coating Expressions and Equations

Fraction		Constituents	Volume Expression	Mass Expression
Organic		Volatile Organic Compounds	V_{VOC}	M_{VOC}
		Exempt-Volatiles	V_E	M_E
Aqueous		Water	V_W	M_W
Solid		Non-Volatiles	V_S	M_S
"Cure-Volatiles"		Reaction Volatiles		M_C
		Coating Property	Expression	Units
A	D_C	Coating Density	$\Sigma M_i / \Sigma V_i$	grams/liter
B*	M_T	Total Volatiles (mass percent)	$(M_{VOC} + M_E + M_W + M_C) / \Sigma M_i$	%
C	C_{CV}	Cure Volatiles Content	$M_C / \Sigma V_i$	grams/liter
D	M_V	Organic Volatiles (mass percent)	$(M_V + M_E) / \Sigma M_i$	%
E ₁	M_W	Water Content (mass percent)	$M_W / \Sigma M_i$	%
E ₂	V_W	Water Content (volume percent)	$V_W / \Sigma V_i$	%
F	C_{EX}	Exempt Compounds Content****	$M_E / \Sigma V_i$	grams/liter
G	V_B	Nonvolatiles (volume percent)	$V_S / \Sigma V_i$	%
H ₁ *		VOC Content (nonvolatiles)	$(M_{VOC}) / V_S$	grams/liter
H ₂ *		VOC Content (less water & exempt compounds)	$(M_{VOC}) / (V_S + V_{VOC})$	grams/liter
I	D_{TH}	Thinner Density	$\Sigma M_i / \Sigma V_i$	grams/liter

*Edited to conform with 60 FR 64330 symbols

Acetone was recently identified to have a low photochemical reactivity, as a result it was added to the list of "exempt" compounds. When Method 24 in 40 CFR Part 60 was published, acetone was considered a VOC. Therefore, the method that will be used to determine the acetone content in a coating should be specified. This is also applicable to any new addition to the list of exempt compounds, unless an EPA approved test method already exists.

VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS

Coating Category	VOHAP limits ^{a,b,c}		
	grams/liter coating (minus water and exempt compounds)	grams/liter solids ^d	
		t ≥ 4.5°C	t < 4.5°C ^e
General use	340	571	728
Specialty	--	--	--
Air flask	340	571	728
Antenna	530	1,439	--
Antifoulant	400	765	971
Heat resistant	420	841	1,069
High-gloss	420	841	1,069
High-temperature	500	1,237	1,597
Inorganic zinc high-build	340	571	728
Military exterior	340	571	728
Mist	610	2,235	--
Navigational aids	550	1,597	--
Nonskid	340	571	728
Nuclear	420	841	1,069
Organic zinc	360	630	802
Pretreatment wash primer	780	11,095	--
Repair and maint. of thermoplastics	550	1,597	--
Rubber camouflage	340	571	728
Sealant for thermal spray aluminum	610	2,235	--
Special marking	490	1,178	--
Specialty interior	340	571	728
Tack coat	610	2,235	--
Undersea weapons systems	340	571	728
Weld-through precon. primer	650	2,885	--

^aThe limits are expressed in two sets of equivalent units. Either set of limits may be used for the compliance procedure described in §63.785(c)(1), but only the limits expressed in units of g/L solids (nonvolatiles) shall be used for the compliance procedures described §63.785(c)(2)-(4).

^bVOC (including exempt compounds listed as HAP) shall be used as a surrogate for VOHAP for those compliance procedures described in §63.785(c)(1)-(3).

^cTo convert from g/L to lb/gal, multiply by (3.785 L/gal)(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.

^dVOHAP limits expressed in units of mass of VOHAP per volume of solids were derived from the VOHAP limits expressed in units of mass of VOHAP per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.

^eThese limits apply during cold-weather time periods, as defined in §63.782. Cold-weather allowances are not given to coatings in categories that permit over a 40 percent VOHAP content by volume. Such coatings are subject to the same limits regardless of weather conditions.

40 CFR 51.100 (s) - Exempt Compounds

(s) Volatile organic compounds (VOC) means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

(1) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity:

acetone;

methane;

ethane;

methylene chloride (dichloromethane);

1,1,1-trichloroethane (methyl chloroform);

1,1,1-trichloro-2,2,2-trifluoroethane (CFC-113);

trichlorofluoromethane (CFC-11);

dichlorodifluoromethane (CFC-12);

chlorodifluoromethane (CFC-22);

trifluoromethane (FC-23);

1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC-114);

chloropentafluoroethane (CFC-115);

1,1,1-trifluoro 2,2-dichloroethane (HCFC-123);

1,1,1,2-tetrafluoroethane (HFC-134a);

1,1-dichloro 1-fluoroethane (HCFC-141b);

1-chloro 1,1-difluoroethane (HCFC-142b);

2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);

pentafluoroethane (HFC-125);

1,1,2,2-tetrafluoroethane (HFC-134);

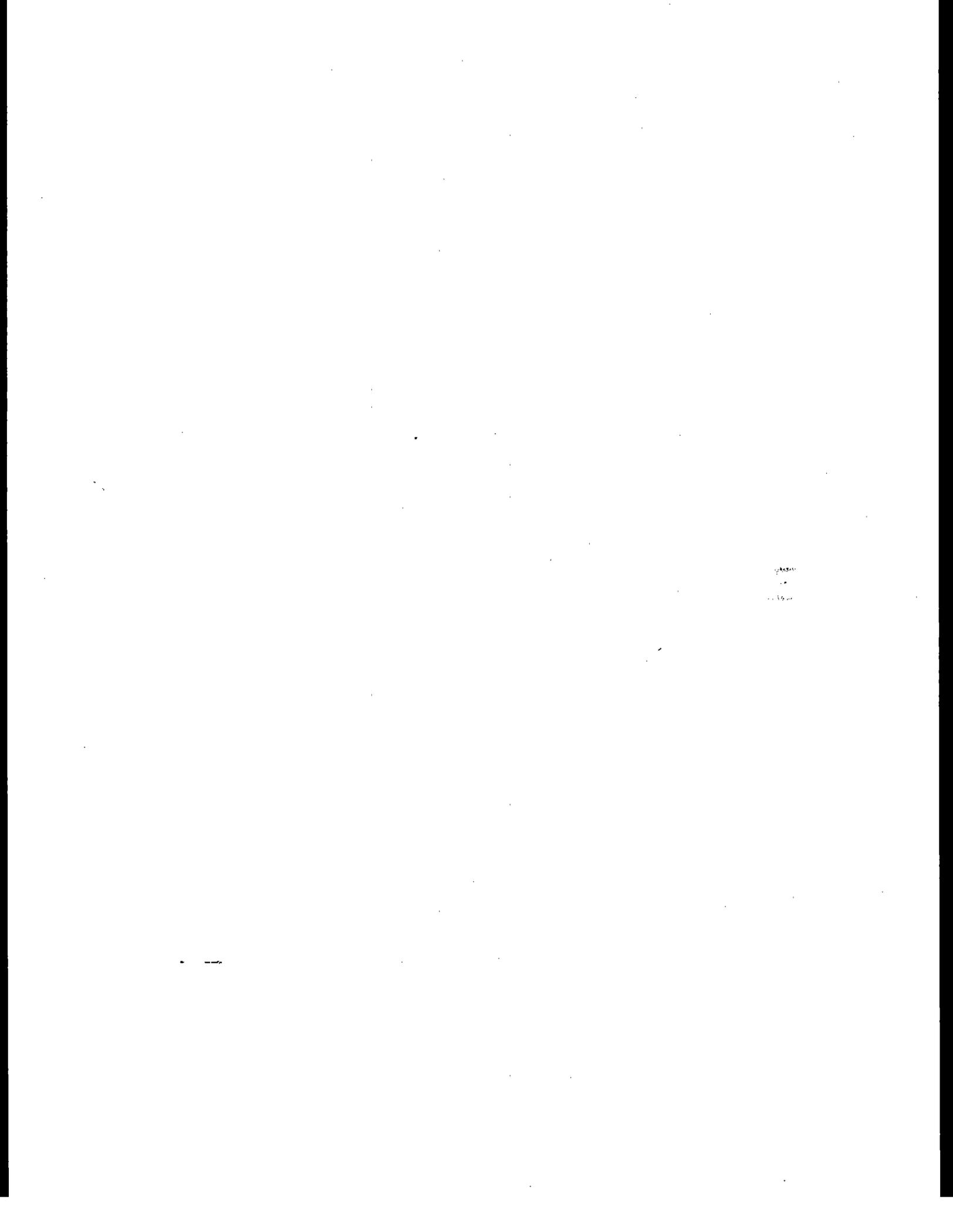
1,1,1-trifluoroethane (HFC-143a);

1,1-difluoroethane (HFC-152a);

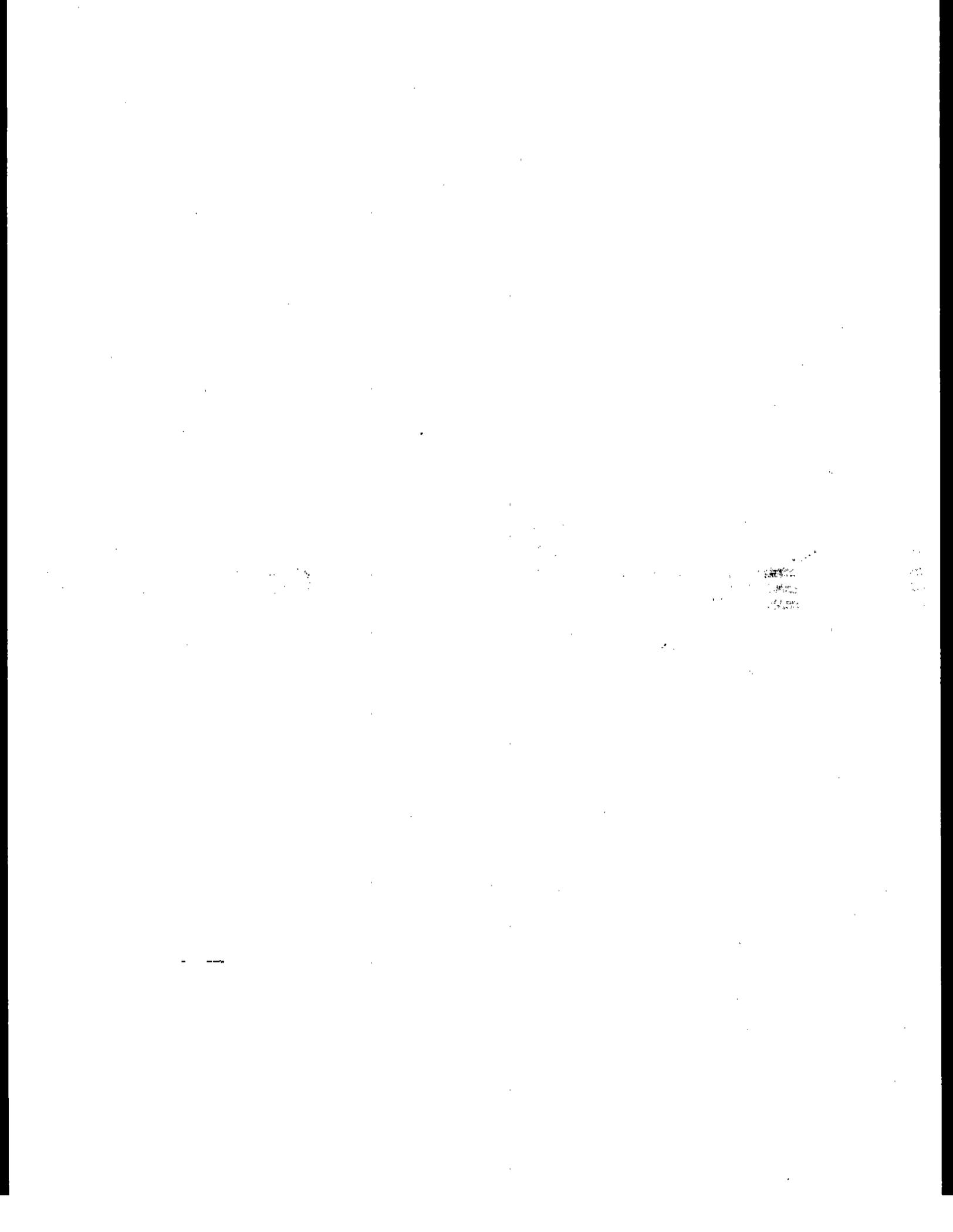
and perfluorocarbon compounds which fall into these classes:

- (i) Cyclic, branched, or linear, completely fluorinated alkanes;
- (ii) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
- (iii) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
- (iv) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

(2) For purposes of determining compliance with emissions limits, VOC will be measured by the test methods in the approved State implementation plan (SIP) or 40 CFR part 60, appendix A, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and such exclusion is approved by the enforcement authority.



**Attachment C:
COATING DEFINITIONS**



General use coating

G1 General use coating means any coating that is not a specialty coating.

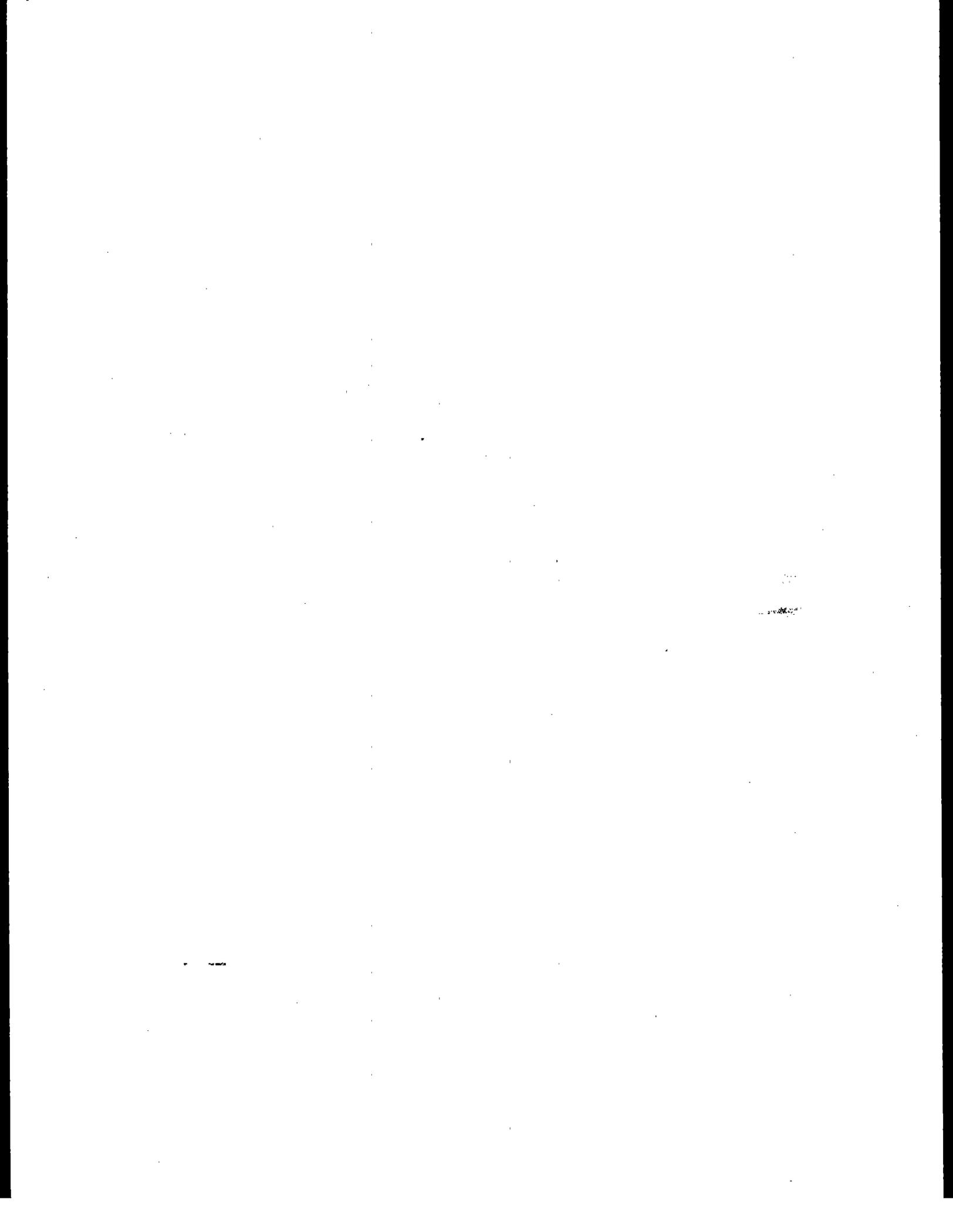
Specialty coating

means any coating that is manufactured and used for one of the specialized applications described within this list of definitions.

- S1 Air flask specialty coating means any special composition coating applied to interior surfaces of high pressure breathing air flasks to provide corrosion resistance and that is certified safe for use with breathing air supplies.
- S2 Antenna specialty coating means any coating applied to equipment through which electromagnetic signals must pass for reception or transmission.
- S3 Antifoulant specialty coating means any coating that is applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and that is registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act.
- S4 Heat resistant specialty coating means any coating that during normal use must withstand a temperature of at least 204°C (400°F).
- S5 High-gloss specialty coating means any coating that achieves at least 85 percent reflectance on a 60 degree meter when tested by ASTM Method D523 (incorporation by reference--see §63.14).
- S6 High-temperature specialty coating means any coating that during normal use must withstand a temperature of at least 426°C (800°F).
- S7 Inorganic zinc (high-build) specialty coating means a coating that contains 960 grams per liter (8 pounds per gallon) or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance. (These coatings are typically applied at more than 2 mil dry film thickness.)
- S8 Military exterior specialty coating or Chemical Agent Resistant Coatings ("CARC") means any exterior topcoat applied to military or U.S. Coast Guard vessels that are subject to specific chemical, biological, and radiological washdown requirements.
- S9 Mist specialty coating means any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the paint film prior to curing.
- S10 Navigational aids specialty coating means any coating applied to Coast Guard buoys or other Coast Guard waterway markers when they are recoated aboard ship at their usage site and immediately returned to the water.
- S11 Nonskid specialty coating means any coating applied to the horizontal surfaces of a marine vessel for the specific purpose of providing slip resistance for personnel, vehicles, or aircraft.

S12	Nuclear specialty coating	means any protective coating used to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusion by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure (ASTM D4082-89 [incorporation by reference--see §63.14]), relatively easy to decontaminate (ASTM D4256-89 [reapproved 1994] [incorporation by reference--see §63.14]), and resistant to various chemicals to which the coatings are likely to be exposed (ASTM D3912-80 [incorporation by reference--see §63.14]). [Nuclear coatings should meet the general protective requirements outlined by the Department of Energy (formerly U.S. Atomic Energy Commission Regulatory Guide 1.54).]
S13	Organic zinc specialty coating	means any coating derived from zinc dust incorporated into an organic binder that contains more than 960 grams of elemental zinc per liter (8 pounds per gallon) of coating, as applied, and that is used for the expressed purpose of corrosion protection.
S14	Pretreatment wash primer specialty coating	means any coating that contains a minimum of 0.5 percent acid, by mass, and is applied only to bare metal to etch the surface and enhance adhesion of subsequent coatings.
S15	Repair and maintenance of thermoplastic coating/commercial vessels	means any vinyl, chlorinated rubber, or bituminous resin coating that is applied over the same type of existing coating to perform the partial recoating of any in-use commercial vessel. (This definition does not include coal tar epoxy coatings, which are considered "general use" coatings.)
S16	Rubber camouflage specialty coating	means any specially formulated epoxy coating used as a camouflage topcoat for exterior submarine hulls and sonar domes.
S17	Sealant for thermal spray aluminum	means any epoxy coating applied to thermal spray aluminum surfaces at a maximum thickness of 1 dry mil.
S18	Special marking specialty coating	means any coating that is used for safety or identification applications, such as markings on flight decks and ships' numbers.
S19	Specialty interior coating	means any coating used on interior surfaces aboard U.S. military vessels pursuant to a coating specification that requires the coating to meet specified fire retardant and low toxicity requirements, in addition to the other applicable military physical and performance requirements.
S20	Tack specialty coating	means any thin film epoxy coating applied at a maximum thickness of 2 dry mils to prepare an epoxy coating that has dried beyond the time limit specified by the manufacturer for the application of the next coat.
S21	Undersea weapons systems specialty coating	means any coating applied to any component of a weapons system intended to be launched or fired from under the sea.
S22	Weld-through preconstruction primer (specialty coating)	means a coating that provides corrosion protection for steel during inventory, is typically applied at less than 1 mil dry film thickness, does not require removal prior to welding, is temperature resistant (burn back from a weld is less than 1.25 centimeters [0.5 inches]), and does not normally require removal before applying film-building coatings, including inorganic zinc high-build coatings. When constructing new vessels, there may be a need to remove areas of weld-through preconstruction primer due to surface damage or contamination prior to application of film-building coatings.

APPENDIX F
EXAMPLE FORMS



Example 1. TOTAL (MONTHLY) PAINT USAGE -- AUGUST 1996

A	B	C	D	E	F	G	H	I	J	K	L	M
Paint ID	Usage (L)	VOC (g/L)	EPA Category	LIMIT (g/L solids)	Avg Solv Dens(g/L)	Vol Solids (L)	Max Allow Thin Ratio	Thinner ID	Density (g/L)	Actual Usage (L)	Allowed Usage (L)	Compliance Demonstrate
124 White DOD-E-24607	1067.4	338	Gen Use	571	845	0.600 ^a	<0.01	N/A	---	---	---	YES
150 Green Mil-P-24441/1C	507.2	338	Gen Use	571	845	0.600 ^a	<0.01	N/A	---	---	---	YES
5705 Haze Gr Mil-C-24635	522.3	334	Gen Use	571	790	0.577 ^a	<0.01	N/A	---	---	---	YES
BRA640 Red A/F	179.8	337	A/F	765	855	0.62 ^b	0.16	GTA007	860	18.9	28.7	YES
BRA642 Black A/F	283.9	337	A/F	765	855	0.62 ^b	0.16	GTA007	860	32.8	45.3	YES
FPD052/FPA327 White	2006.1	190	Gen Use	571	920	0.793 ^a	0.31	GTA007	860	510.9	613.0	YES
KHA303/A Red	4651.8	320	Gen Use	571	860	0.628 ^a	0.04	GTA007	860	68.1	208.7	YES
KHA302/A Grey	12518.9	320	Gen Use	571	860	0.628 ^a	0.04	GTA007	860	64.3	561.7	YES
CLCOOOS White	4201.4	334	Hi Gloss	841	771	0.567 ^a	0.17	N/A	---	---	---	YES
Color Topping MS-100	54.9	418	Sp Mark	1178	820	0.490 ^a	0.18	GTA013	888	1.9	9.9	YES

[guideexam 8/27/96]

a - Calculated using Equation 2 in regulation: Volume Solids, G = 1 - (C/F).

b - Specified by manufacturer.

M = YES if allowed thinner usage, L is > actual thinner usage, K.

L = B * H

H = ((G * E) - C) / J

F = From Table 2-2

Index of Column Headings in Example 1.

<u>Column</u>	<u>Description</u>
A	Coating identification - by the supplier or manufacturer (include batch number)
B	Monthly usage (liters, L)
C	As-supplied VOC content of the batch of coating (grams per liter of coating, minus water and exempt solvents, g/L coating)
D	Applicable marine coating category (see Table 2 and/or definitions section of regulation)
E	Applicable maximum VOHAP limit (see Table 2 of regulation)
F	Average solvent density of the coating (grams per liter, g/L)
G	Volume of solids (nonvolatiles) in the as-supplied batch of coating (liters, L)
H	Maximum allowable thinning ratio (liters of thinning solvent per liter of as-supplied coating)
I	Thinning solvent identification - by the supplier or manufacturer
J	Density of the thinning solvent (grams per liter, g/L)
K	Total monthly volume of thinning solvent used to thin particular coating (liters, L)
L	Total monthly volume of thinning solvent allowed based on maximum allowable thinning ratio calculations for a particular coating (liter, L)
M	Compliance determination: Yes/No (Is the actual thinner usage less than or equal to the allowable thinner usage for the month?)

Example 2. TOTAL (MONTHLY) PAINT USAGE -- JUNE 1995

A	B	C	D	PAINT (COATINGS) DATA				G	H	I	J	THINNER DATA	
				VOC (g/L)	EPA Category	EPA LIMIT (g/L-ctg)	EPA LIMIT (g/L-ctg)					Avg Solvent Density (g/L)	Vol Solids (L)
Ameron 385AME	270.6	276	Gen Use	340	571	845	0.873 ^a	0.14	N/A	800	—		
Ameron 70ESP	1438.3	336	A/F	400	765	845	0.602 ^a	0.16	N/A	800	—		
Ameron 3279	1.9	336	Hi Temp	500	1237	760	0.575 ^a	0.47	N/A	800	—		
Devco 235 BAR	2246.4	288	Gen Use	340	571	850	0.68 ^b	0.13	N/A	800	—		
Devco 233	36.0	288	Gen Use	340	571	855	0.663 ^a	0.11	N/A	800	—		
Devco ABC-3	2384.6	336	A/F	400	765	840	0.600 ^a	0.15	N/A	800	—		
Devco 379	566.7	312	Hi Gloss	420	841	860	0.637 ^a	0.26	N/A	860	—		
Devco F129	37.8	400	A/F	400	765	840	0.524 ^a	0.00	N/A	860	—		
Hempel 58030-10420	18.9	176	Gen Use	340	571	900	0.804 ^a	0.35	N/A	800	—		
Intl 484-C	5.7	400	A/F	400	765	840	0.524 ^a	0.00	N/A	888	—		
Intl CLB000S	37.8	336	Hi Gloss	420	841	845	0.602 ^a	0.20	N/A	870	—		
Intl CLB134S	3.8	336	Gen Use	340	571	845	0.600 ^a	0.01	N/A	870	—		
Intl CLL274S	47.3	336	Gen Use	340	571	840	0.600 ^a	0.01	N/A	870	—		

COATING-BY-COATING COMPLIANCE DEMONSTRATED

Example 2. TOTAL (MONTHLY) PAINT USAGE -- JUNE 1995 (continued)

A	B	C	D	E	F	G	H	I	J	K	L
Paint ID	Usage (L)	VOC (g/L)	EPA Category	EPA LIMIT (g/L.ctg)	EPA LIMIT (g/L.solds)	Avg Solvent Density (g/L)	Vol Solids (L)	Max Allow Thinning Ratio	Thinner ID	Density (g/L)	Allowed Usage (L)
Intl BRA570	1430.7	336	A/F	400	765	855	0.607 ^a	0.15	GTA415	870	211.1
Intl EPA075/076V	15.1	336	Gen Use	340	571	840	0.600 ^a	0.01	GTA415	870	—
Intl EPA490/489	75.7	85	Gen Use	340	571	870	0.902 ^a	0.49	GTA415	870	37.4
Intl EPA491/489	102.2	85	Gen Use	340	571	870	0.902 ^a	0.49	GTA415	870	50.5
Intl FPL274/FPA327	3.8	190	Gen Use	340	571	870	0.782 ^a	0.29	GTA415	870	1.1
Intl FPJ034/327	11.4	190	Gen Use	340	571	870	0.782 ^a	0.29	GTA415	870	3.4
Intl FPY999/FPA327	548.8	190	Gen Use	340	571	870	0.782 ^a	0.29	GTA415	870	161.7
Intl KHA302/062	287.7	320	Gen Use	340	571	845	0.621 ^a	0.04	GTA415	870	11.5
Intl KHA303/062	403.1	320	Gen Use	340	571	845	0.621 ^a	0.04	GTA415	870	16.1
Intl TQA374/375	7.6	0	Gen Use	340	571	870	1.000 ^a	0.66	GTA415	870	5.0
Intl 990	15.1	326	Hi Gloss	420	841	855	0.619 ^a	0.22	GTA415	870	3.4
Porter 904	7.6	178	Gen Use	340	571	820	0.785 ^a	0.31	GTA415	870	2.4

a = Calculated using 1-(C/G)

b = Specified by manufacturer

GROUP COMPLIANCE

Total allowable thinner usage =

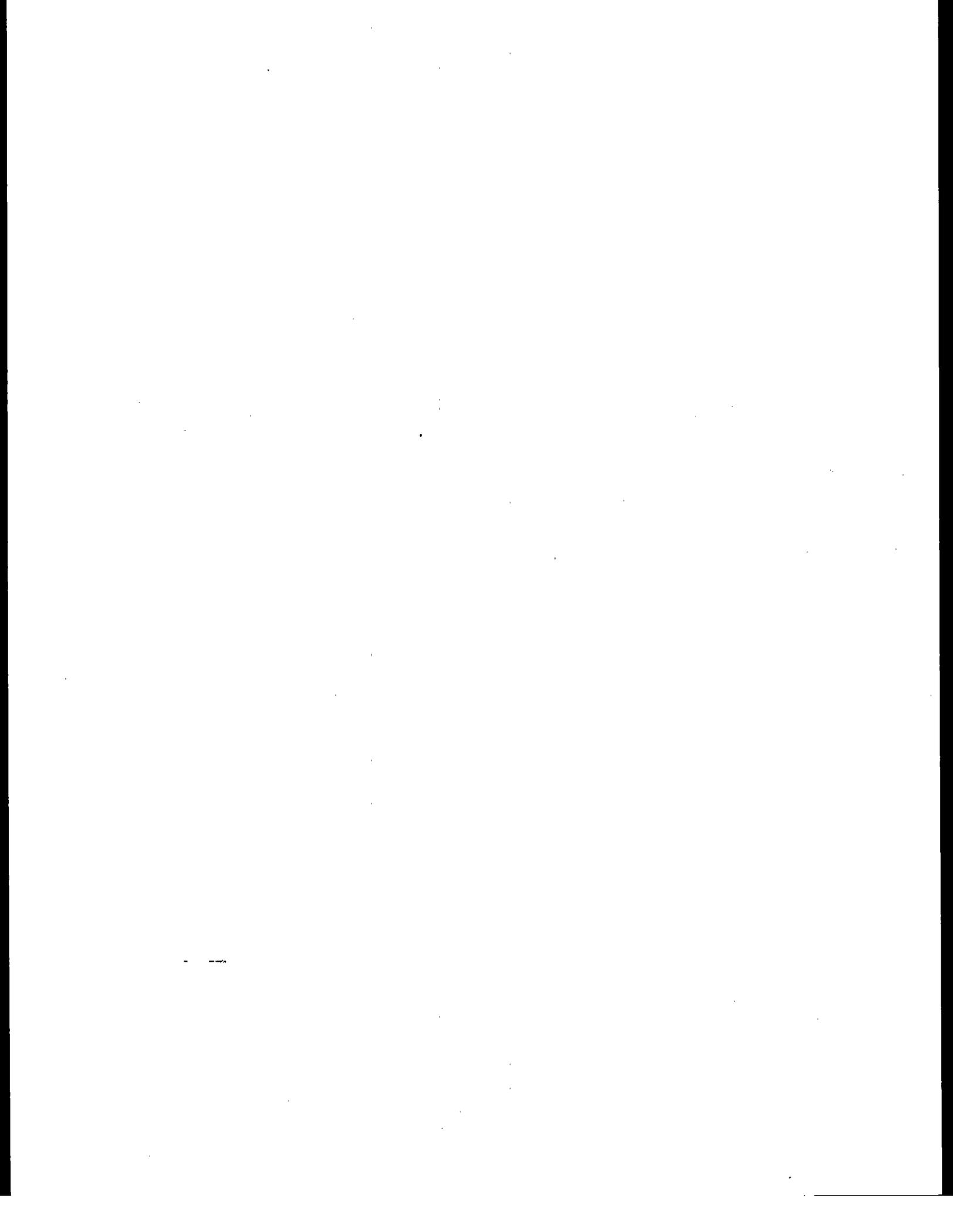
Total actual thinner usage =

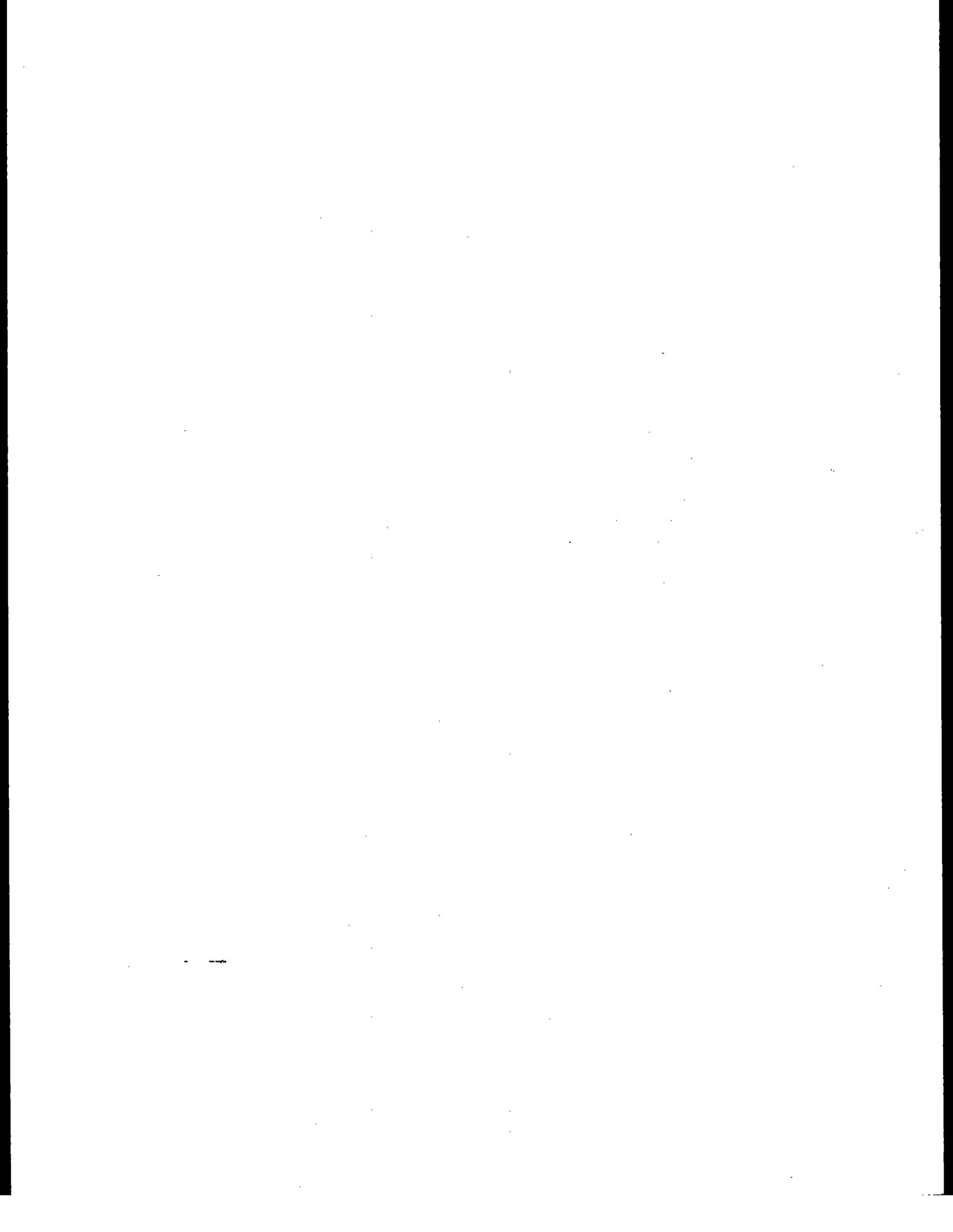
503.6 L

352 L

APPENDIX G

EXAMPLE CALCULATIONS





CALCULATIONS FOR DEMONSTRATING COMPLIANCE

Equation 1 is to be used to calculate the maximum allowable thinning ratio, R:

$$R = \frac{(\text{Vol Solids}) (\text{VOHAP limit}) - (\text{mass of VOC})}{\text{Density of thinner}}$$

For a General Use coating with a VOC content of 300 g/L of coating, you must determine how much thinner (with a density of 810 g/L) can be added to the coating. The average density of the solvents (volatiles) in the coating is 855 g/L.

In trying to calculate "R" using Equation 1, we have everything except volume solids in the coating.

In the absence of actual manufacturer's data, Equation 2 is used to calculate volume solids:

$$\text{Volume solids} = 1 - \frac{(\text{mass of volatiles})}{(\text{avg density of volatiles})}$$

$$\text{Volume solids} = 1 - \frac{(300 \text{ g/L})}{(855 \text{ g/L})} = 0.649$$

Having calculated volume solids, the maximum allowable thinning ratio can be determined:

$$R = \frac{(0.649) (571 \text{ g/l solids}) - (300 \text{ g/L})}{(810 \text{ g/L})} = 0.087 \frac{\text{L thinner}}{\text{L coating}}$$

Equation 3 is to be used to calculate the total allowable volume of thinner used during the month:

Total allowable volume of Thinner	=	Sum of (R * volume of each batch used during non-cold weather days)	+	Sum of (R * volume of each batch used during cold weather days)
--	---	---	---	---

If the total allowable volume of thinner (calculated using equation 3) is less than or equal to the actual volume of thinner used during the month, compliance is demonstrated.

NOTE: The proper mix ratio must be used for any multi-component coatings.

EXAMPLE

VOHAP DATA SHEET:¹
PROPERTIES OF THE COATING "AS SUPPLIED"
BY THE MANUFACTURER²

Coating Manufacturer: SHIP-COATINGS-R-US
Coating Identification: 1A-2B-3C (HIGH-TEMP)
Batch Identification: XXX-YYY-ZZZ
Supplied To: AOK SHIPYARD

Properties of the coating as supplied² to the customer:

- A. Coating Density: (D_c), 1000 g/L
 ASTM D1475-90 Other³
- B. Total Volatiles: (m_v), 35 Mass Percent
 ASTM D2369-93 Other³
- C. Water Content:
1. (m_w), 0 Mass Percent
 ASTM D3792-91 ASTM D4017-90 Other³
2. (v_w), 0 Volume Percent
 Calculated Other³
- D. HAP Volatiles: (m_{HAP}), 15 Mass Percent
- E. Nonvolatiles: (v_n), 38 Volume Percent
 Calculated Other³
- F. VOHAP Content (VOHAP):
1. 231 g/L solids (nonvolatiles)
2. 150 g/L coating (less water and NON-vohap exempt compounds)
- G. Thinner VOHAP Density: $D_{th(VOHAP)}$ 310 g/L
ASTM 319 Other³

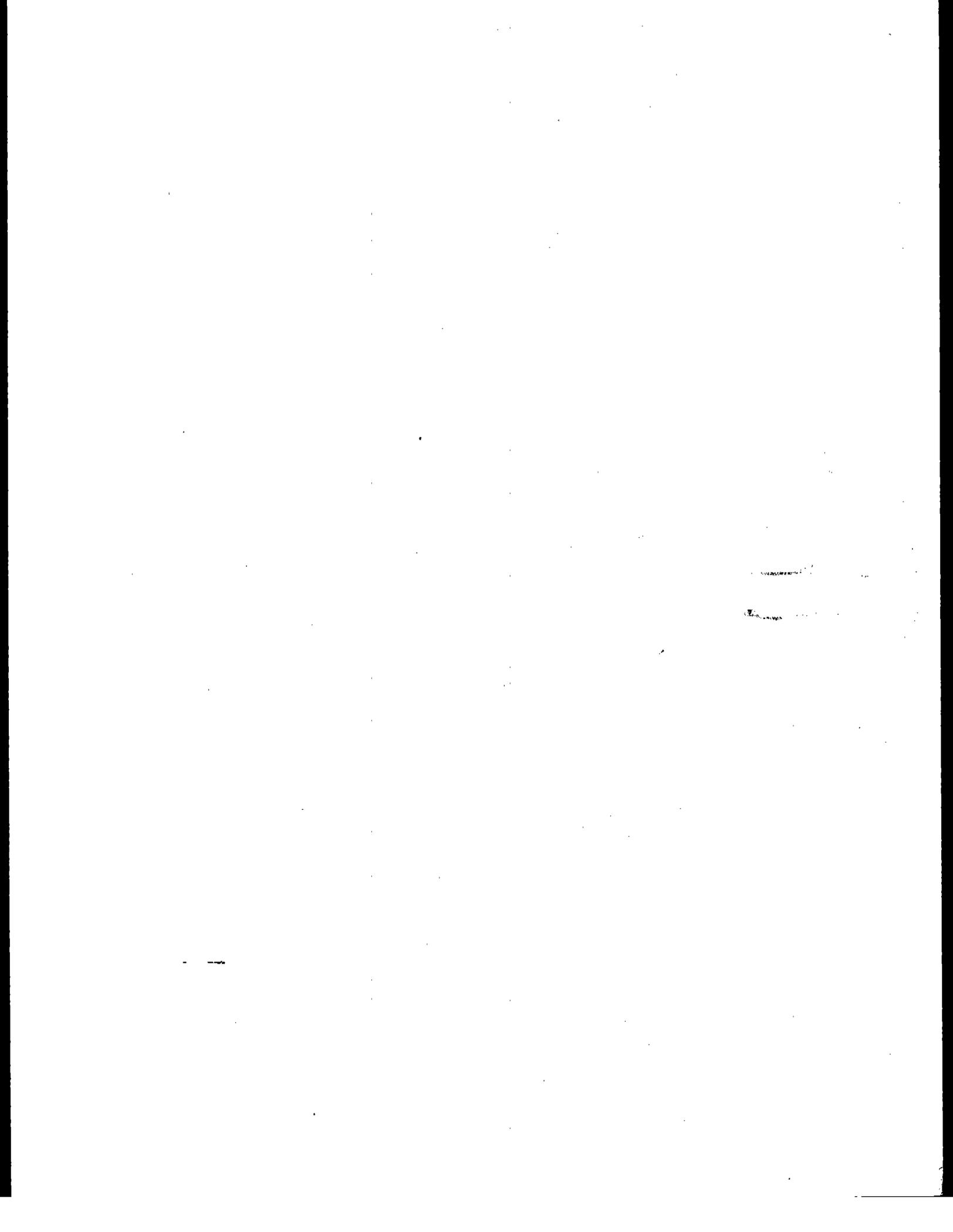
Remarks: (use reverse side)

Signed: Debbie Bond Date: 9/17/96

¹Adapted from EPA-340/1-86-016 (July 1986), p. II-2.

²The subscript-"s" denotes each value is for the coating "as supplied" by the manufacturer.

³Explain the other method used under "Remarks."



TECHNICAL REPORT DATA

(Please read Instructions on reverse before completing)

1. REPORT NO. EPA-453/R-97-001	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE A Guidebook on How to Comply with the Shipbuilding and Repair (Surface Coating) Operations National Standards for Hazardous Air Pollutants		5. REPORT DATE January 1997
		6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S)		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Office of Air Quality Planning and Standards Office of Air and Radiation U.S. Environmental Protection Agency Research Triangle Park, NC 27711		10. PROGRAM ELEMENT NO.
		11. CONTRACT/GRANT NO. 68-D1-0115
12. SPONSORING AGENCY NAME AND ADDRESS Director, Office of Air Quality Planning and Standards Office of Air and Radiation U.S. Environmental Protection Agency Research Triangle Park, NC 27711		13. TYPE OF REPORT AND PERIOD COVERED Final
		14. SPONSORING AGENCY CODE EPA/200/04
15. SUPPLEMENTARY NOTES		
16. ABSTRACT This guidebook provides an overview of the shipbuilding and ship repair regulation. It is not a complete statement of the legal and technical requirements of the regulation: 60 FR 64330, (December 15, 1995). The reader will have to refer to the original document (and amendments) for the complete text. The purpose of the information is to assist the major source facilities to comply with the regulation. The guidebook contains a copy of the regulation and contains several example questions and responses to questions that have been asked by industry or State/Regional representatives. The responses represent the Agency's best guidance and are included to provide some basis for consistency.		
17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS Environmental protection Air pollution control Marine coating limits Reporting and recordkeeping requirements Shipbuilding and ship repair standards	b. IDENTIFIERS/OPEN ENDED TERMS VOC, HAP, Shipbuilding, Ship repair	c. COSATI Field/Group
18. DISTRIBUTION STATEMENT Release Unlimited	19. SECURITY CLASS (Report) Unclassified	21. NO. OF PAGES 146
	20. SECURITY CLASS (Page) Unclassified	22. PRICE
(Empty row)		

