ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 89, 92, and 94

[AMS–FRL–6482–3]

RIN 2060–AI17

Control of Emissions of Air Pollution From New Marine Compression-Ignition Engines at or Above 37 kW

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final Rule.

SUMMARY: In this action, we are establishing an emission control program for new marine diesel engines rated at or above 37 kilowatts. The affected engines are used for propulsion and auxiliary purposes in a wide variety of marine applications. The standards for these engines will require substantial reductions in oxides of nitrogen and particulate matter emissions to correspond with the next round of emission standards for comparable land-based engines. The standards will lead to significant reduction in oxides of nitrogen and particulate matter emissions from this source. When combined with other mobile source emission control programs, the program described in this action will help provide long-term improvements in air quality in many port cities and other coastal areas. Overall, these emission standards provide much-needed assistance to states facing ozone and particulate air quality problems, which can cause a range of adverse health effects for their residents, especially in terms of respiratory impairment and related illnesses.

The persons potentially affected by this action are those who manufacture new marine diesel engines or marine vessels or other equipment using such engines. Additional requirements apply to companies that rebuild or maintain these engines.

DATES: This final rule is effective January 28, 2000 except the amendments to 40 CFR parts 89 and 92 will become effective February 28, 2000, unless EPA receives adverse comment on or before January 28, 2000 regarding the amendments to 40 CFR parts 89 and 92. If we receive such comment, we will publish a timely withdrawal in the **Federal Register** informing the public that the amendments to 40 CFR parts 89 and 92 will not take effect.

The incorporation by reference of certain publications listed in the regulations in 40 CFR part 94 is approved by the Director of the Federal Register as of January 28, 2000.

ADDRESSES: Materials relevant to this rulemaking, including the Final Regulatory Impact Analysis, are contained in Public Docket A–97–50. Additional materials can be found in Public Docket A–92–28 (Control of Air Pollution; Emission Standards for New Gasoline Spark-Ignition and Diesel Compression-Ignition Marine Engines). For the changes to 40 CFR part 92, additional materials can be found in Public Docket A–94–31 (Emission Standards for Locomotives and Locomotive Engines). These dockets are located at Room M–1500, Waterside Mall (ground floor), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. You may inspect the docket from 8:00 a.m. until 5:30 p.m., Monday through Friday. We may charge a reasonable fee for copying docket materials.

For further information on electronic availability of this action, see **SUPPLEMENTARY INFORMATION** below.

FOR FURTHER INFORMATION CONTACT: Alan Stout, Office of Mobile Sources, (734) 214–4805, *stout.alan@epa.gov.*

For a copy of the Information Collection Request, contact Sandy Farmer at EPA by phone at (202) 260–2740, by email at *farmer.sandy@epamail.epa.gov,* or download it off the Internet at *http://www.epa.gov/icr* and refer to EPA ICR No. 1897.02.

SUPPLEMENTARY INFORMATION:

Regulated Entities

You may be regulated by this action if you manufacture or introduce into commerce new marine diesel engines or if you make vessels or other equipment using these engines. Other requirements may apply to you if you rebuild or maintain marine engines. Regulated categories and entities include:

Category	Examples of regulated entities	NAICS Code	SIC Code
Industry	Manufacturers of new marine diesel engines	333618	3519
Industry	Manufacturers of marine vessels	3366	3731 3732
Industry	Engine repair and maintenance	811310	7699

This list is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether particular activities may be regulated by this action, carefully examine the regulations, especially the applicability criteria in § 94.1. Direct any questions regarding the applicability of this action to the person listed in **FOR FURTHER INFORMATION CONTACT**.

Obtaining Electronic Copies of the Regulatory Documents

The preamble, regulatory language and Final Regulatory Impact Analysis are also available electronically from the EPA Internet Web site. This service is free of charge, except for any cost already incurred for internet connectivity. The electronic version of this rulemaking is made available on the day of publication on the primary Web site listed below. The EPA Office of Mobile Sources also publishes **Federal Register** notices and related documents on the secondary Web site listed below.

1. http://www.epa.gov/docs/fedrgstr/EPA–AIR/ (either select desired date or use Search feature)
2. http://www.epa.gov/oms/ (look in What's New or under the specific rulemaking topic)

Please note that due to differences between the software used to develop the document and the software into which the document may be downloaded, changes in format, page length, etc., may occur.

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I. Introduction

A. Background

The Clean Air Act as amended in 1990 mandated that we establish emission regulations for a variety of previously unregulated nonroad mobile sources of emissions, including marine engines. We most recently proposed emission standards and an associated compliance program for commercial marine diesel engines on December 11, 1998 (63 FR 68508).[1] At a public hearing on January 19 and in the rest of the comment period we heard from 35 commenters. The program we are finalizing here follows from the approach described in the proposal, though we made numerous adjustments in response to the comments and other information received since the proposal. The proposal included an extensive discussion of the air quality problems we are addressing and the regulatory history of this rulemaking (see Sections I, II, and XI of the proposal). A summary description of the final rule follows in this document. Further discussion of issues and the anticipated impacts of the final rule are in the Final Regulatory Impact Analysis (Final RIA) and the Summary and Analysis of Comments. These documents and all the comments we received are contained in Docket A–97–50.

The International Maritime Organization (IMO) is the Secretariat for the International Convention on the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto (better known as MARPOL 73/78). Annex VI to that Convention, adopted on September 27, 1997 (but not yet in force) contains, among other provisions, requirements to limit NO_X emissions from marine diesel engines, but sets no limits for other engine pollutants (*i.e.,* HC, CO, PM). Other provisions of Annex VI include requirements for ozone-depleting substances, sulfur content of fuel, incineration, VOCs from refueling, and fuel quality. The United States has signed Annex VI, but the Annex has not yet been forwarded to the Senate for its advice and consent.

B. Statutory Authority

We conducted a study of emissions from nonroad engines, vehicles, and equipment in 1991, as directed by the Clean Air Act, section 213(a) (42 U.S.C. 7547(a)). Based on the results of that study, we determined that emissions of NO_X, VOCs (including HC), and CO from nonroad engines and equipment contribute significantly to ozone and CO concentrations in more than one nonattainment area (see 59 FR 31306, June 17, 1994). Given this determination, section 213(a)(3) of the Act requires us to establish (and from time to time revise) emission standards for those classes or categories of new nonroad engines, vehicles, and equipment that in our judgment cause or contribute to such air pollution. We have determined that commercial and recreational marine diesel engines rated over 37 kW cause or contribute to such air pollution (See also the preamble to the proposed rule).

Where we determine that other emissions from new nonroad engines, vehicles, or equipment significantly contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, section 213(a)(4) authorizes EPA to establish (and from time to time revise) emission standards from those classes or categories of new nonroad engines, vehicles, and equipment that cause or contribute to such air pollution. We have determined that commercial and recreational marine diesel engines rated over 37 kW cause or contribute to such air pollution (See also the preamble to the proposed rule).

II. Scope of Application

Clean Air Act section 213(a)(3) broadly sets the scope of application of this final rule, instructing us to promulgate regulations containing standards applicable to emissions from those classes or categories of new nonroad engines and new nonroad vehicles that are found to cause or contribute to ozone or carbon monoxide concentrations in more than one nonattainment area. As explained below and in the text of the regulations, the rulemaking generally covers all new diesel engines installed in a marine vessel, and all new marine vessels that use those engines. This includes both propulsion and auxiliary engines.

A. Definition of New

We are extending the definition of ''new'' contained in 40 CFR 89.2 to marine diesel engines at or above 37 kW. Under that definition, an engine is considered new until its legal or equitable title has been transferred, or the engine has been placed into service. Because the definition of new in 40 CFR 89.2 applies to both engines and equipment, its extension to the marine sector extends as well to vessels. Starting with the implementation dates of the new emission standards, we will consider vessels new until their equitable or legal title has been transferred to an ultimate purchaser. In addition, we will consider a vessel new if it undergoes modifications such that the modified vessel derives at least half

[1] The December 1998 proposal superseded earlier proposed emission standards for marine diesel engines (59 FR 55929, November 9, 1994, and 61 FR 4600, February 7, 1996). References in this document to ''the proposal'' or ''the proposed rule'' refer only to the December 1998 proposal.

of its value from new materials or components. This prevents someone from re-using the hull or other parts from a used vessel to avoid emission standards.

To further clarify the definition of ''new,'' 40 CFR 89.2 specifies that a nonroad engine, vehicle, or equipment is placed into service when it is used for its functional purpose. For the purpose of applying this criteria to marine diesel engines and new vessels, we have concluded that a marine diesel engine is used for its functional purpose when it is installed on a marine vessel. This clarification is needed because some marine diesel engines are made by modifying a highway or nonroad engine that has already been installed on a vehicle or other equipment. In other words, the engine has been transferred to an ultimate purchaser after it is used for its functional purpose as a land-based nonroad engine (for example, on a truck or a backhoe) and is therefore no longer new, but it is later removed for marinization and installation on a marine vessel. While the 40 CFR 89 requirements for land-based nonroad diesel engines do not contain such a requirement, we believe it is reasonable to treat these engines as new marine engines when they are installed on a vessel. While the practice of marinizing used highway or nonroad engines may be infrequent, it could become more common if these engines are not subject to the standards finalized in this document.

As described in the proposal, we are not applying emission standards to remanufactured engines. In Section VI we discuss the potential for considering this issue in the future.

B. Importing and Exporting Marine Engines

Engines imported for use in the United States are covered by this final rule whether they are imported as loose engines or are already installed on a vessel constructed elsewhere. We will require all imported engines to have a certificate of conformity from us before anyone may enter them into commerce in the United States, subject to limited exemptions. Accordingly, we are applying the approach contained in other highway and nonroad engine programs, according to which any engine or vessel that is imported into the United States without a valid certificate of conformity and that was built after the effective date of the applicable standards, will be considered new at the time it is imported into the United States. As a new engine, it will have to comply with the relevant emission limits in effect at the time it was manufactured. Thus, for example, a marine vessel manufactured in a foreign country in 2007 that is imported into the United States in 2010 would be considered new, and its engine would have to comply with the emission limits in effect for model year 2007. This provision is important to prevent manufacturers from avoiding the emission requirements by building vessels abroad, transferring their title, and then importing them as used vessels.

Engines that are to be exported to countries with emission standards different than ours are exempt from the requirements of this final rule. Marine engines that are exported but are subsequently re-imported into the United States must, however, meet the new emission standards that apply based on the manufacturing date of the engine. This would be the case when a foreign company purchases marine engines manufactured in the United States for installation on a vessel that will be subsequently exported to the United States. It would also be the case when a foreign company purchases marine engines manufactured in the United States for dressing and subsequent re-exportation to the United States. Engines that are intended for export but that will be re-imported into the United States are subject to the emission standards at the time the engine is manufactured, unless the vessel manufacturer or marinizer intends to re-certify the engines to comply with emission standards before they enter the United States. Consequently, foreign purchasers who do not wish to recertify the engines will need to make sure they purchase complying engines for those marine vessels or engines they intend to subsequently offer for sale in the United States. Engines intended for export and sale in a foreign country should be easily distinguishable from complying engines because complying engines are required to be labeled as such. Any person who introduces into commerce in the United States a noncomplying engine that is intended for export and use in a foreign country will be subject to civil penalties.

To determine when an engine or vessel will be considered ''imported'' for the purposes of determining compliance with emission standards, we will follow the approach contained in the Harmonized Tariff Schedule of the United States (HTSUS). According to HTSUS, vessels used in international trade or commerce or vessels brought into the territory of the United States by nonresidents for their own use in pleasure cruising are admitted without formal customs consumption entry or payment of duty.[2] This approach is consistent with the Treasury Department's ruling, which concluded that vessels coming into the United States temporarily as carriers of passengers or merchandise are not subject to customs entry or duty, but if brought into the United States permanently, they are to be considered and treated as imported merchandise. *See American Customs Brokerage Co., Inc., a/c Astral Corp.* v. *United States,* 375 F. Supp. 1360, 1366 (Cust. Ct. 1974). This means that engines installed on vessels flagged in another country that come into the United States temporarily will not be subject to the emission standards, because they are not imported and are therefore not new engines under Clean Air Act Section 216(3) and 213(d).

C. Marine Engine Definitions

In the final land-based nonroad engine rule, we determined that a portable auxiliary engine used onboard a marine vessel should not be considered a marine engine (October 23, 1998, 63 FR 56967). Instead, a portable auxiliary engine is considered to be a land-based engine subject to the requirements of 40 CFR Part 89. To distinguish a marine auxiliary engine installed on a marine vessel from a land-based portable auxiliary engine used on a marine vessel, we specified in that rulemaking that an auxiliary engine is installed on a marine vessel if its fuel, cooling, or exhaust systems are an integral part of the vessel. These auxiliary engines are therefore not fundamentally different than land-based engines and we regulate them under 40 CFR Part 89.

With very few exceptions, this final marine engine rule applies equally to propulsion and auxiliary engines. Consistent with the definitions in 40 CFR Part 89, a propulsion engine is one that is intended to move a vessel through the water or assists in guiding the direction of the vessel (including, for example, bow thrusters). Auxiliary engines are all other marine engines. Propulsion and auxiliary engines have different duty cycles and different load factors for calculating emission credits. Auxiliary engines will not be subject to not-to-exceed requirements until we finalize them for land-based nonroad engines. Also, auxiliary engines are not eligible to qualify as recreational engines.

[2] HTSUS (1994), Additional U.S. Note 1. In particular, cruise ships, ferry boats, cargo ships, barges and ''similar vessels for the transportation of persons or goods'' are duty free. HTSUS (1994) 8901.

Marine drilling platforms are another example of an application where the question arises of whether an engine is a marine engine (subject to 40 CFR Part 94) or a land-based nonroad diesel engine (subject to 40 CFR 89). Drill ships are clearly marine vessels, so engines installed in drill ships are marine engines. In contrast, permanently anchored drilling platforms would not qualify as marine vessels, so none of the engines associated with one of these facilities would be a marine engine. A third class of drilling equipment is less clear. Semi-submersible drilling rigs are moored to the ocean bottom, but have some propulsion capability. We consider these to be marine vessels, so any engine that is ''installed'' on such a rig would be a marine engine. As described above, we would consider portable engines on a drilling rig to be land-based nonroad engines, since they are not installed on the vessel.

D. Remanufactured Engines

As described in the proposed rule, we are not setting emission standards for engines originally manufactured before the Tier 2 standards take effect. Section VI describes our ongoing concern with remanufactured engines.

E. Recreational Engines

We continue to believe, as we discussed in the proposal, that it is appropriate to distinguish between commercial and recreational marine engines for the purpose of establishing requirements for engine and vessel manufacturers. This is because the performance characteristics for these two kinds of engines can be substantially different, due to the different characteristics of the vessels on which they are installed. Commercial marine vessels tend to be displacement hull vessels, designed and built for a unique application. Power ratings for engines used on these vessels are analogous to land-based applications, and these engines are warranted for 2,000 to 5,000 hours of use a year. Recreational vessels, on the other hand, tend to be planing vessels, and engines used on these vessels are designed to achieve higher power output with less engine weight. This increase in power reduces the lifetime of the engine; recreational marine engines are therefore warranted for fewer hours of operation than their commercial counterparts.

We will be pursuing emission limits for recreational marine engines in a separate rulemaking. This makes it necessary to clearly define recreational marine engine, so engine manufacturers and users will be able to know which set of standards apply to their engine.

In this final rule, we are finalizing a definition of recreational marine engine as a propulsion engine that is intended by the manufacturer to be installed on a recreational vessel. To ensure that users will not install a recreational engine on a commercial vessel his engine, we are requiring the following label language (in our proposed rulemaking for recreational marine engines, we will also address any changes that would be appropriate or necessary for this label):

THIS ENGINE IS CATEGORIZED AS A RECREATIONAL ENGINE UNDER 40 CFR PART 94, AND IS NOT SUBJECT TO THE EMISSION STANDARDS OF THAT PART. INSTALLATION OF THIS ENGINE IN ANY NONRECREATIONAL VESSEL IS A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY.

It should be noted that there is no prohibition against installing a certified commercial marine engine on a recreational vessel. In fact, we encourage recreational vessel manufacturers to use certified engines whenever possible due to the beneficial impact on the environment. There is also no prohibition on installing an old marine engine in an old vessel.

We are revising our definition of recreational marine engine, in response to comments, to bring it more in line with the Coast Guard approach contained in 46 U.S.C. 2101. Specifically, we are defining a recreational vessel as a vessel that is intended by the vessel manufacturer to be operated primarily for pleasure or leased, rented or chartered to another for the latter's pleasure. However, we continue to believe that it is necessary to put some boundaries on this definition, since certain vessels that are used for pleasure may have operating characteristics that are, in fact, similar to commercial marine vessels. For example, engines installed on excursion boats should be grouped with commercial marine engines because they are used much more intensely (more hours, higher load) than engines on a similar vessel operated exclusively for one's own pleasure. Therefore, we are drawing on the Coast Guard's definition of passenger vessel to further delineate what will be considered to be a recreational vessel. Specifically, vessels of less than 100 gross tons that carry more than six passengers will not be considered recreational vessels, and vessel of 100 gross tons or more that carry one or more passengers will not be considered recreational vessels. For the purpose of defining a recreational vessel, a passenger will have the same meaning as that in given by 46 U.S.C. 2101(21), which is generally a person that pays to be on the vessel. Finally, a vessel that is used solely for competition will not be considered a recreational vessel.

A vessel will be a considered a recreational vessel if the boat builder intends that the customer will operate the boat consistent with the recreational-vessel definition. Relying on the boat builder's intent is necessary since manufacturers need to establish a vessel's classification before it is sold, whereas the Coast Guard definitions apply at the time of use. The final definition therefore relies on the intent of the boat builder to establish that the vessel will be used consistent with the above criteria. If a boat builder manufactures a vessel for a customer who intends to use the vessel for recreational purposes, we will always consider that a recreational vessel regardless of how the owner (or a subsequent owners) actually uses it. To be able to verify that boat buyers don't abuse this provision, we would need to have some way of verifying the validity of the vessel manufacturer's original intent, for example, with written assurance from the buyer. We are not finalizing such a requirement in this final rule, but intend to address it when we propose emission standards for recreational marine engines.

F. Engine Dressing Exemption

Some companies produce marine engines by marinizing new, land-based engines and modifying them for installation on a marine vessel. This can be done in a way that does not affect emissions. For example, the modifications may consist of adding mounting hardware and a generator or reduction gears for propulsion. It can also involve installing a new marine cooling system that meets original manufacturer specifications and duplicates the cooling characteristics of the land-based engine, but with a different cooling medium (*i.e.,* water). This is similar to the process of buying certified land-based engines to make a generator or other equipment. This simplified approach of producing an engine can be described as dressing an engine for a particular application. Because the modified land-based engines are subsequently used on a marine vessel, however, these modified engines will be considered marine diesel engines, which then fall under the requirements in this final rule.

The final rule exempts engines from the marine certification requirements if

the marinizing company meets the following conditions.

(i) The engine being dressed, (the ''base'' engine) must be a heavy-duty highway, land-based nonroad, or locomotive engine, certified pursuant to 40 CFR Part 86, 40 CFR Part 89, or 40 CFR Part 92. The base engine must be certified to the standards that apply at the time the base engine manufacturer completes assembly of the engine. We don't allow stockpiling of uncertified engines.

(ii) The dressing process must not involve any changes that can reasonably be expected to increase engine emissions. This includes a requirement that engine cooling and aftercooling systems stay within the ranges specified by the original engine manufacturer.

(iii) The original emissions-related label must remain on the engine.

(iv) The dressing company must report annually to us the models that are exempt under this provision.

(v) The engine model must not be primarily for marine application.

The goal of our engine dressing provisions is to eliminate the burden of certification and other compliance requirements where we have confidence that engines already certified to comparable standards from other programs will meet marine engine emission standards. Moreover, the certificate holder for the base engine continues to be liable, under the terms of the original certification, for the emissions performance of the dressed engine. We will nevertheless require, as we proposed, that a company certify dressed engines under 40 CFR Part 94 if the majority of engines produced are for marine application. This prevents a company taking advantage of the engine dressing exemption to produce marine diesel engines under, for example, a land-based nonroad diesel certificate, even though the engine might be used almost exclusively for marine application. Companies that produce engines qualifying for the engine dressing exemption will be exempt from the certification requirements and prohibited acts of 40 CFR Part 94. Minimal reporting and labeling requirements apply to these engines, as described below.

Companies that produce marine versions of their base engines may qualify for the engine dressing exemption if they meet the established criteria. Base engine manufacturers utilizing the dressing exemption must submit marine-specific emission data on their dressed marine engines. In addition, we may request marine-specific data from the original engine manufacturer if another company is dressing their engines for marine application. We would use this data for oversight to determine the validity of the exemption. Except for this testing responsibility, the discussion of engine dressing applies equally whether an original engine manufacturer or a post-manufacture marinizer produces the marine engine.

Heavy-duty highway engines are certified to a much different test cycle, which has in the past prevented us from accepting a highway engine certificate for nonroad applications for certification. Now that we are proposing to revise the standards and test procedures for these engines to control steady-state emissions, we can be more confident that they will adequately control emissions in a marine application. Thus, any certified heavy-duty highway, nonroad, or locomotive engine will be eligible for the dressing exemption.

Engine manufacturers might use averaging, banking, or trading to produce land-based engines that are certified with emission levels exceeding the comparable marine emission standard. These engines could not meet the proposed engine dressing criteria. Unlike an original engine manufacturer, a post-manufacture marinizer has no control over this. We have therefore simplified the criteria to say that any engine must be certified to land-based standards that apply to that engine at the time the dressing company buys the engine. This is true regardless of whether the original engine was certified using emission credits under the ABT program. Similarly, our NTE provisions do not apply to dressed engines, unless NTE provisions are in place for the certified base engine.

Engines that qualify as dressed engines are exempt from the marine emission standards. We therefore will not treat these as regulated marine engines. If we find that a company with an engine dressing exemption does not, in fact, meet the criteria spelled out in the regulations, the engines are not exempt and we may pursue enforcement for selling uncertified marine engines and/or tampering with certified engines.

We are including in the final rule a requirement that dressing companies put a label on each exempted engine stating the name of the dressing company and the fact that the engine was marinized without affecting emission controls. This will make clear that the engine is acceptable for use in a marine vessel. In addition, dressing companies will need to give us minimal notification that they are modifying certified engines. This can be done once annually for a company's whole range of dressed marine engines.

In addition to the labeling requirement, we encourage engine manufacturers to inform companies dressing their engines of these requirements. This will not only aid us in educating affected companies, it may help protect engine manufacturers from exposure to liability if their engines are ever found in a marine vessel without proper documentation.

G. Foreign-Trade Exemption

Oceangoing vessels with Category 3 propulsion engines typically have additional Category 1 and Category 2 engines onboard. We are adopting a provision that will allow owners of qualifying vessels to obtain an exemption from the national emission requirements for Category 1 and Category 2 engines that are installed on any U.S.-flagged vessel engaged in foreign trade or other overseas operation. We expect that ship owners will buy MARPOL-compliant engines because ships that travel to foreign ports will eventually need to demonstrate compliance with the Annex VI NO_X limits to get an International Air Pollution Prevention Certificate for their vessels. While the proposed regulation text inadvertently limited this to auxiliary engines, the exemption applies equally to propulsion engines that meet the criteria. This provision will allow all engines on qualifying vessels to meet solely the international requirements. This exemption will go into effect at the same time as the implementation of the domestic emission standards for these engines.

A vessel owner can obtain this exemption if it can be demonstrated to the Administrator's satisfaction that the vessel: (a) Will spend less than 25 percent of its total engine operation time within 320 nautical kilometers (200 nautical miles) of U.S. territory; or (b) will not operate between two United States ports, as evidenced by the vessel having solely a registry endorsement from the Coast Guard. The second qualifying criterion was described in the preamble to the proposed rule, but was inadvertantly omitted from the proposed regulation text. For installation of new or replacement engines on used vessels, the vessel's service record can be used to show where the vessel will be operated. For a new vessel, however, this determination must be made before it is placed into service, so it will not be possible to use the vessel's service record to make the determination described in (a). Instead, application to the Administrator for this exemption

can rely on the vessel owner's business plans for the vessel, as well as on records from other vessels under the owner's control, any features of the vessel that will tend to limit its use within the specified area, or such other information as the Administrator shall request. Similarly, the determination described in (b) will rely on a good faith statement by the owner that the vessel is intended to hold only a registry endorsement. It should be noted, however, that if we learn that a vessel owner subsequently receives a coastwise or other registration that would allow the vessel to operate between two U.S. ports, we may review the validity of the exemption. This would also have a bearing on future requests for an exemption.

Category 1 and 2 engines that are exempt under this provision must be labeled to indicate that they have been certified only to the MARPOL Annex VI NO_X curve limits and that they are for use solely on vessels that meet the above criteria.

H. National Security Exemption

With regard to the national security exemption, we are applying an approach similar to that in our existing land-based nonroad and gasoline marine programs (40 CFR 89.908 and 40 CFR 91.1008). Under this exemption, only marine engines used in vessels that exhibit substantial features ordinarily associated with military combat, such as armor, permanently affixed weaponry, specialized electronic warfare systems, unique stealth performance requirements, and/or unique combat maneuverability requirements and which will be owned and/or used by an agency of the federal government with the responsibility for national defense, will be exempt from the regulations in this subpart for reasons of national security. No request for an exemption is necessary for these engines.

There may be situations in which an exemption from the emission controls is necessary for other vessels used for national security. Manufacturers may in these cases request a special national security exemption. A manufacturer will need to justify this request and get an agency of the federal government charged with responsibility for national defense to endorse it. We understand that the Navy, and all other branches of the government, will do their best to comply with the emission standards finalized in this final rule.

I. Competition Exemption

We are addressing competition engines, also referred to as racing engines, in two ways. First, engines produced by the manufacturer specifically for competition are exempt from the requirements of the rule. The Clean Air Act does not consider these to be nonroad engines, so none of the requirements of 40 CFR 94 apply, except for a requirement to label the engines. Manufacturers need only get our approval to sell engines under this exemption. Second, someone can modify a certified engine for competition purposes. Normally we would prohibit making such changes to certified engines under the anti-tampering provisions. The final rule, however, exempts these engines from the anti-tampering provisions for engines that are used ''solely for competition.''

Engines or vessels used for amateur or occasional competition do not meet the competition exemption criteria. Our review of a request from a manufacturer should prevent abuse of this provision for engines that are originally produced for competition. There is, however, no approval step for someone who modifies engines for competition, so we will more clearly spell out criteria indicating whether the engine will be used solely for competition. Specifically, owners meeting all the following criteria will qualify for the competition exemption:

—The engine and vessel are designed and built to be used solely for competition. For example, we would not expect engines used solely for competition to have a lifetime until rebuild greater than about 10 hours.

—The vessel is registered with a nationally recognized organization that sanctions professional competitive events.

In addition, once an engine is modified for competition, the engine is no longer certified to the requirements of 40 CFR 94 and must therefore not be used in an application where we would require a certified engine.

J. Other Exemptions

We are extending other nonroad exemptions to marine diesel engines. These include the testing exemption, the manufacturer-owned exemption, the display exemption, and the export exemption. Remember that these exemptions are not necessarily automatic, and that the engine or vessel manufacturer, or ultimate engine owner, may need to apply for them. As part of the approval, we may require labels on exempted engines.

III. Engine Categories

The engines that are the subject of this action are very diverse in terms of physical size, engine technology, control hardware, and costs associated with reducing emissions. These differences make it difficult to design one set of emission requirements for all marine diesel engines. For example, numerical emission limits that may be reasonable and feasible for a 37 kW engine used on an 5.5-meter (18-foot) boat may not be reasonable or feasible for a 1,500 kW engine installed on a tug or a 20,000 kW engine installed on an ocean-going container ship. Similarly, numerical emission limits appropriate for very large engines may be not be appropriately stringent for smaller engines, requiring little or no emission reduction.

Consequently, it is necessary to divide marine diesel engines into categories for the purposes of applying emission limits and duty cycles. We are adopting the categorization scheme summarized in Table 1. This relies predominantly on per-cylinder displacement to distinguish between categories of engines. This has the advantage that per-cylinder displacement is an engine characteristic that is not easily changed and is constant for a given engine model or series of engine models.

TABLE 1.—ENGINE CATEGORY DEFINITIONS

Category	Displacement per cylinder
1	disp. <5 liters (and power ≥37 kW).
2	5 ≤ disp. <30 liters.
3	disp. ≥30 liters.

We define Category 1 engines as those marine diesel engines that are rated above 37 kW and have a per-cylinder displacement of less than 5 liters. This definition groups together the class of marine engines that are serially produced and generally derived from land-based nonroad configurations or use the same emission control technologies. These engines are typically used as propulsion engines on relatively small commercial vessels (fishing vessels, tugboats, crewboats, *etc.*) They are also used as auxiliary engines on vessels of all sizes and applications. Category 2 engines are those marine diesel engines with per-cylinder displacement at or above 5 liters and up to 30 liters. These are the largest engines that are widely used as propulsion engines in harbor and coastal vessels in U.S. waters. These engines also provide auxiliary power on very large vessels. Many of these engines are of similar size and configuration as locomotive engines or use comparable emission control technologies. We define Category 3

engines as those marine diesel engines with a displacement at or above 30 liters per cylinder. These are very large high-power engines that are used almost exclusively for propulsion on vessels engaged in international trade.

We further divide Category 1 engines into several subgroups. These subgroups are similar to the land-based nonroad diesel engine subgroups, except that the subgroups are based on per-cylinder displacement rather than on engine power.

The final rule also divides Category 2 into subgroups, with gradually increasing emission standards for larger engines. Engines between 5 and 15 L/cyl are generally derived from locomotive engines and have corresponding emission standards. The current range of marine engine models over 15 L/cyl have design constraints that limit their ability to control emissions. Since engines under 15 L/cyl may not currently be capable of providing adequate propulsion power for all vessels in this size range, we believe the best approach is to accommodate the technology constraints of these engines by setting emission standards less stringent than for locomotive-derived engines. These standards reflect the reduced capability of controlling emissions from engines designed to operate on heavy fuel (and the need to reduce emissions from a higher baseline level).

Engines models between 15 and 20 L/cyl in particular are in a somewhat transitional category. These engines are sometimes used in harbor and inland river applications alongside locomotive-derived engines. Higher-power models are used in coastal and open-sea operations alongside engines with much larger per-cylinder displacement. The final rule separates engines between 15 and 20 L/cyl into two subgroups, those with a rated power less than 3300 kW and those with a rated power 3300 kW or greater. Locomotive engine manufacturers are developing new locomotive engines between 15 and 20 L/cyl (up to about 4500 kW), but it is not clear if these engines will be made available for marine application. In the Tier 2 time frame, we therefore believe it is appropriate to set emission standards based on what is achievable for the engines currently available. If it appears that these larger locomotive engines will become available as marine engines in the future, we would need to reconsider this approach to take into account the emission-control capabilities of these engines.

There are several marine engine models available worldwide with per-cylinder displacement between 20 and 30 liters. Very few of these engines are currently installed in vessels that are flagged and used in the United States. In the final rule we expand Category 2 to include engines up to 30 L/cyl. We subdivide the category with graduated emission standards for 20 to 25 L/cyl and 25 to 30 L/cyl engines reflecting the emission control capability of those engines. This should prevent high-emission engines from displacing smaller engines in common applications.

IV. Emission Standards and Related Provisions

This section describes the emission standards for commercial marine diesel engines at or above 37 kW. It also describes provisions that will ensure that engines comply with the emission limits across all engine speed and load combinations, throughout their useful life. We discuss in this section requirements related to test procedures, fuel specifications, certification, and compliance.

A. Standards and Dates

1. MARPOL Annex VI

MARPOL Annex VI specifies that any diesel engine over 130 kW installed on a vessel constructed on or after January 1, 2000 and to any engine that undergoes a major conversion after that date must comply with the Annex VI NO_X limits.[3] These NO_X requirements, listed in Table 2, are intended to apply to all vessels in a country's fleet. However, according to Regulation 13(1)(b)(ii) of the Annex, a country has the option of setting alternative NO_X control measures for engines on vessels that are not operated internationally. This final rule is intended to be an alternative NO_X control measure under the Annex for engines on US-flagged vessels that are not operated internationally.

In this final rule, we are not adopting the MARPOL Annex VI NO_X emission limits under U.S. law. However, we are encouraging engine manufacturers to make Annex VI compliant engines available and ship owners to purchase and install them on all vessels constructed on or after January 1, 2000. Because this voluntary emission control program is the first set of standards for marine diesel engines at or above 37 kW in the U.S., we sometimes refer to them as Tier 1 standards. We are also not finalizing emission limits for Category 3 engines in this rule, and the voluntary MARPOL Annex VI NO_X limits will be the sole emission control applicable to those engines.

To encourage vessel owners to purchase MARPOL Annex VI compliant engines prior to the date the Annex goes into force for the United States, we have developed a voluntary certification program that will allow engine manufacturers to obtain a Statement of Voluntary Compliance to the MARPOL Annex VI NO_X limits. Owners of vessels that are not operated internationally but that will be subject to the MARPOL survey requirements after Annex VI goes into effect for the United States should be aware that they may be required to demonstrate compliance with the Annex VI NO_X limits when they apply for their International Air Pollution Prevention (IAPP) certificate. Owners of vessels that are operated internationally may also be required to demonstrate compliance with the MARPOL limits after the Annex goes into effect, both because they will be required to have an IAPP and because they may be subject to port state controls. For all of these reasons, we expect ship owners to begin purchasing compliant engines for installation on ships constructed on or after January 1, 2000, and to bring engines into compliance when they undergo a major conversion after that date. Ship owners who fail to comply with the MARPOL VI NO_X requirements may face compliance and liability problems after U.S. ratification or the Annex goes into force internationally. Bringing engines into compliance at that time may involve retrofitting or replacing noncomplying engines. Ship owners may also be required to remove their vessels from service while these issues are resolved.

TABLE 2.—MARPOL ANNEX VI EMISSION LIMITS

Engine Speed, rpm	NO_X (g/kW-hr)
$n < 130$	17.0
$130 \leq n < 2000$	$45.n^{(-0.2)}$
$n \geq 2000$	9.8

This voluntary approach to the MARPOL Annex VI emission limits depends on the assumption that manufacturers will produce MARPOL-compliant engines before the emission limits go into effect internationally. Engine manufacturers can use the voluntary certification program mentioned above to obtain a Statement of Voluntary Compliance to the MARPOL NO_X limits. If, however, manufacturers continue to sell engines

[3] The Annex VI emission limits are not enforceable until the annex goes into effect: 12 months after it is ratified by 15 countries representing at least 50 percent of the gross tonnage of the world's merchant shipping.

with emissions above MARPOL levels or if the Annex is not ratified by the United States or does not go into effect internationally, we will revisit the need to adopt these emission limits under the Clean Air Act.

Finally, note that after the standards finalized in this final rule go into effect, engines meeting these national standards will also meet the less stringent MARPOL Annex VI NO_X limits and separate emission testing will not be required. However, engines intended for use on foreign-trade vessels or for sale in foreign countries will still be required to comply with the administrative, recordkeeping, and survey requirements that will be mandated when MARPOL Annex VI goes into force for the United States.

2. Tier 2

The Clean Air Act provides guidance for setting emission standards for nonroad engines in section 213(a)(3), instructing us to set standards that achieve the greatest degree of emission reduction achievable through the application of technology the Administrator determines will be available for the engines or vehicles to which such standards apply, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers and to noise, energy, and safety factors associated with the application of such technology.

As described in the Final Regulatory Impact Assessment, manufacturers of marine diesel engines typically start with a partially or fully completed land-based nonroad diesel engine or, in some cases, a highway diesel engine, and adapt it for use in the marine environment. The emission standards that apply to land-based nonroad diesel engines therefore serve as the primary basis for the standards that apply to marine diesel engines. The land-based nonroad diesel engine standards in turn were designed to expand the use of highway engine technologies. The marine diesel new emission standards, and the underlying technology assumptions, are similarly derived from highway engine emission standards and technologies.

Table 3 contains the emission standards for commercial marine diesel engines at or above 37 kW. We are setting a standard of 7.2 g/kW-hr NO_X+HC for most Category 1 engines. For engines under 0.9 liters per cylinder, a 7.5 g/kW-hr applies to correspond with the standard for land-based nonroad engines. The PM standards vary by engine size, as shown in Table 3; these values generally match the limits that apply to the counterpart land-based engines. The CO emission standard is 5 g/kW-hr for all engines. New Category 1 engines under 0.9 liters per cylinder produced starting in 2005 must comply with these standards. For Category 1 engines over 2.5 liters per cylinder, the starting date is 2007. For the rest of Category 1, these standards apply to new engines produced beginning in 2004.

For Category 2 engines between 5 and 15 liters per cylinder, the NO_X+HC and PM standards are 7.8 g/kW-hr and 0.27 g/kW-hr, respectively. Bigger Category 2 engines are subject to graduated NO_X+HC standards and a PM standard of 0.5 g/kW-hr, as shown in Table 3. These standards apply to new engines produced beginning in 2007.

These dates refer to the point at which the manufacturer concludes the final assembly of the engine. This also applies to remanufactured and imported engines that qualify as new marine engines. In addition, an engine can become new without being manufactured, remanufactured, or imported, if it is an engine that has been placed into service in non-marine application before being installed on a vessel. In this case, these dates refer to the point at which the engine is installed on a vessel.

TABLE 3.—FINAL TIER 2 EMISSIONS STANDARDS AND DATES

Category	Displacement (liters/cylinder)	Starting Date	NO_X+THC (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)
1	power ≥37 kW disp. <0.9	2005	7.5	0.40	5.0
	0.9 ≤ disp. < 1.2	2004	7.2	0.30	5.0
	1.2 ≤ disp. < 2.5	2004	7.2	0.20	5.0
	2.5 ≤ disp. < 5.0	2007	7.2	0.20	5.0
2	5.0 ≤ disp. < 15.0	2007	7.8	0.27	5.0
	15.0 ≤ disp. < 20.0, and power < 3300 kW	2007	8.7	0.50	5.0
	15.0 ≤ disp. < 20.0, and power ≥3300 kW	2007	9.8	0.50	5.0
	20.0 ≤ disp. < 25.0	2007	9.8	0.50	5.0
	25.0 ≤ disp. < 30.0	2007	11.0	0.50	5.0

We are finalizing requirements to ensure that engines meet the emission standards during real-world operation, not only under laboratory testing (see Section IV.G.). Under these requirements, marine engines may not exceed the applicable emission standards by a fixed percentage while the engine is operated in any load/speed combination contained in specified not-to-exceed (NTE) zones.

B. Total Hydrocarbons

The emission standards specify total hydrocarbons (THC) rather than nonmethane hydrocarbons. Organic emissions are sometimes expressed as nonmethane hydrocarbons because methane is significantly less reactive than other hydrocarbons in the formation of ozone. However, for diesel engines, methane makes up only about two percent of the total hydrocarbons. In addition, HC generally makes up less than five percent of the combined HC+NO_X from diesel engines. The combination of these two factors makes the methane fraction a mathematically insignificant portion of the HC+NO_X emission standard.

C. Crankcase Emissions

We are requiring that all naturally aspirated marine diesel engines have closed crankcases, where blowby gases are routed into the engine intake air stream. For turbocharged engines, manufacturers may have a closed crankcase or route blowby gases directly to the atmosphere. If manufacturers do not have a closed crankcase, they must make it possible to readily route blowby gases into the exhaust stream or otherwise measure them for an in-use test. This approach is similar to the approach we adopted for locomotives. The purpose of this requirement is to provide manufacturers the incentive to reduce crankcase emissions to the maximum extent possible, or eliminate them altogether.

D. Smoke Requirements

We are not setting smoke requirements for marine diesel engines. Manufacturers have stated that many of these engines, though currently unregulated, are manufactured with smoke limiting controls at the request of the engine purchasers. Users seek low smoke emissions, both because they dislike the associated residue on decks and because they can be subject to penalties in ports that have smoke emission requirements. In many cases, marine engine exhaust gases are mixed with water prior to being released. This practice reduces the significance of smoke emissions, since smoke becomes significantly less visible when mixed with water. Moreover, we believe that the new PM standards will have the effect of further limiting smoke emissions.

E. Alternative Fuels

The new emission standards apply to marine diesel engines, without regard to the type of fuel they use. This is consistent with nonroad diesel engine regulations of 40 CFR Part 89. It is also generally consistent with the locomotive regulations; however, the locomotive regulations apply even more broadly because they also include spark-ignited engines. We are aware that there are currently very few alternative-fueled marine engines, but we believe that it is important to make clear to manufacturers what standards will apply if they produce these engines.

Heavy fuel (or residual fuel) is fundamentally different than the distillate fuel used for testing and most in-use operation. We therefore treat it as an alternative fuel. If manufacturers produce their engines with sufficient hardware to be capable of operating on heavy fuel, they should submit test data with their application for certification showing that they meet the emission standards using both distillate and heavy fuel. The Clean Air Act prohibits removing or rendering inoperative elements of design in regulated engines. If operators add fuel heating and filtering equipment and other hardware to make a certified engine capable of operating on heavy fuel, we would likely consider that to be making the emission control system inoperative. We are requiring a statement on the engine label for engines that can be modified to operate on heavy fuel to discourage operators from making this modification.

To properly address the range of possible alternative-fuel engines, it was necessary to modify the form of the HC standard. In the regulation of highway vehicles and engines, we determined that it is not appropriate to apply total hydrocarbon standards to engines fueled with natural gas, which is primarily methane (59 FR 48472, September 21, 1994). Rather, nonmethane hydrocarbon (NMHC) standards should apply to natural gas engines. We are therefore setting NMHC+NO_X standards for diesel-cycle marine engines that operate on natural gas. The same numerical standards apply to both types of engines. For example, an emission standard of 7.2 g/kW-hr THC+THC that applies to diesel-fueled engines becomes 7.2 g/kW-hr NMHC+NO_X for natural gas engines. Similarly, reported emissions from alcohol-fueled engines are on a basis of total HC-equivalent (THCE). THC-equivalent emissions are calculated from the oxygenated organic components and non-oxygenated organic components of the exhaust, summed together based on the amount of organic carbon present in the exhaust. Refer to the April 11, 1989 final rule for more information regarding the determination of HC-equivalence (54 FR 14426). These approaches will minimize variations in stringency for different fuel types.

F. Test Procedures

In this final rule we rely on previously established test procedures for land-based diesel engines. Specifically, we require that Category 1 marine engines be tested using the land-based nonroad procedures of 40 CFR Part 89, and that Category 2 marine engines be tested using the locomotive test procedures of 40 CFR Part 92. There are two reasons for using this approach. First, most manufacturers of marine diesel engines also manufacture land-based engines and will be equipped to test engines using these test procedures. Second, marine diesel engines are fundamentally similar to their land-based counterparts, and it is therefore appropriate to measure their emissions in the same way. In addition, the test procedures found in 40 CFR Parts 89 and 92 include flexibility for testing alternative-fuel engines. Some changes are nevertheless necessary. Manufacturers should be aware that the test procedures in MARPOL Annex VI are not equivalent to the test procedures described here and in § 94.103 and § 94.104. We are including the modifications to these test procedures as described below.

1. Duty Cycles

Testing an engine for emissions typically consists of exercising it over a prescribed duty cycle of speeds and loads, typically using an engine dynamometer. The duty cycle used to measure emissions for determining compliance with emission standards during the certification process is intended to represent operation in the field. The nature of that duty cycle is critical in evaluating the likely emissions performance of engines designed to those standards. To address operational differences between engines, we are specifying different duty cycles for different types of marine diesel propulsion engines. These are summarized here and described further in the Final RIA. Propulsion engines that operate on a fixed-pitch propeller curve must be certified using the International Standards Organization (ISO) E3 duty cycle. This is a four-mode steady-state cycle developed to represent in-use operation of commercial marine diesel engines. The four modes lie on an average propeller curve based on in-use measurements.

Fixed-speed marine propulsion engines with variable-pitch or electrically coupled propellers will be certified on the ISO E2 duty cycle. This duty cycle is also a four-mode steady-state cycle. It uses the same power and weighting factors as the E3 cycle, but the engine is operated in each mode at rated speed.

Constant-speed auxiliary engines must be certified to the ISO D2 duty cycle. Variable-speed auxiliary engines must be certified to the ISO C1 duty cycle. These duty cycles are consistent with the requirements for land-based nonroad diesel engines.

There is another class of propulsion engines that run at variable-speed and use a variable-pitched propeller. These engines are designed to operate near the power curve for the engine to maximize fuel efficiency. In general, these engines will operate at a constant speed near peak torque except when maneuvering in port, where they operate along the lug curve. Because of the expense of the system, variable-speed engines are rarely used with variable-pitched propellers. ISO does not have a test duty cycle specifically designed for these engines. While we proposed to use the E2 duty cycle for these engines, we have since learned the the in-use operation, especially in port areas, is best represented by the C1 duty cycle. This is consistent with MARPOL Annex VI.

For larger marine engines, conventional emission testing on a dynamometer becomes more difficult because of the size of the engine. Often engine mock ups are used for the development of these engines where a single block is used for many years and only the power assembly is changed out. For Category 2 engines, certification

tests may be performed on these engine mock-ups, provided that their configuration is the same as that of the production engines. To obtain approval for single-cylinder testing the manufacturer must rely on the provision for special test procedures (40 CFR 94.207). This requires a demonstration ''that it is equivalent to the specified procedures.'' We will address the concern that single-cylinder testing may not be appropriate in some cases by evaluation of the individual situations under § 94.27.

2. In-Use Testing

Before manufacturers produce engines, they certify that their engines will meet all the standards that apply, including the standards based on testing with the specified duty cycles and based on the broader Not-to-Exceed standards, throughout the useful life of the engines. We are interested in testing in-use engines to confirm that they are emitting within these standards. For any in-use testing for purposes of section 207(c), we would depend on receiving the permission of the owner to conduct the testing on that vessel. We could do this testing one of two ways. First, we could remove the engine from the vessel and test it on a laboratory dynamometer, much like the manufacturer's certification testing. This would be the most direct way to determine if an engine continues to meet the certification standards after the engine has been installed on a vessel. However, the cost of removing and testing engines this way would be extremely high and a ship operator may be unwilling to allow us to remove the engine from service for emission testing.

Onboard testing is a second type of in-use emission measurement. Being able to conduct emission testing onboard the vessel can make in-use testing more accessible since onboard testing eliminates the need for engine removal and minimizes the disruption of normal vessel operations. The goal is for us to accurately assess the emission performance of these engines when they are in service. We may use onboard emission testing to identify and hold manufacturers responsible for noncompliance with the emission standards (including the Not-to-Exceed limits). The Clean Air Act authorizes us to pursue an emission-related recall if we determine that a substantial number of engines, when properly maintained and used, do not conform to the regulations throughout their useful life. Noncompliance relates to meeting the emissions levels under the associated test procedures, as defined in the regulations. For example, the test procedure for the NTE emission standard calls for nominally steady-state operation within a specified zone of engine operation. In-use testing results may provide credible and probative information relevant to making a determination of compliance. We also recognize that the level of accuracy and precision of in-use testing is one of the key factors to take into account when making any such evaluation or determination of compliance. We believe such systems and procedures would provide a significant benefit to both the agency and the industry.

For marine diesel engines that expel exhaust gases underwater or mix exhaust gases with water, we require that manufacturers equip the engines with an exhaust sample port, where a probe can be inserted for in-use emission tests. It is important that the location of this port allows a well mixed and representative sample of the exhaust. The purpose of this provision is to simplify in-use testing.

3. Test Fuel

The test procedure, including the test fuel, must adequately represent in-use operation to ensure achievement of emission reductions in use. To facilitate the testing process, we generally define a range of specifications for a test fuel that is intended to represent in-use fuels. Marine diesel engines need to comply with emission standards on any fuel falling within the range of the test fuel specifications, with one modification described below. This section describes the test fuel we are specifying for Category 1 and Category 2 engines (see also 40 CFR 94.108). This test fuel is for all testing associated with the standards in this final rule, including certification, production-line, in-use, and NTE testing.

We are applying the recently finalized test fuel specifications for land-based nonroad diesel engines to marine diesel engine testing, with a modification to the sulfur specification as described below. We believe that largely adopting the nonroad fuel will simplify development and certification burdens for marine engines that are developed from land-based counterparts. The test fuel for marine diesel engine testing has a sulfur specification range of 0.03 to 0.80 weight-percent (wt%), which covers the range of sulfur levels observed for most in-use fuels. Manufacturers are generally responsible for ensuring compliance with the emission standards using any fuel within this range. Thus, they will be able to harmonize their marine test fuel with U.S. highway (<0.05 wt%), nonroad (0.03 to 0.40 wt%), locomotive (0.2 to 0.4 wt%) and European testing (0.1 to 0.2 wt%). The full range of test fuel specifications are presented in Chapter 3 of the Final RIA.

We are setting a higher upper limit for the marine diesel engine sulfur specification (0.8 wt%) than was recently finalized for land-based nonroad engines (0.4 wt%), because there is some information available suggesting that marine fuels may have higher sulfur contents than land-based diesel fuels.[4] Using ASTM specification D 2069 as a guide, we considered choosing an upper limit of 1.5 wt% sulfur. However, we are setting an upper limit on sulfur content of 0.8 wt%, because the available data show that most in-use marine fuels have sulfur levels lower than this. Moreover, it is not clear that PM emission could accurately be measured using the specified testing procedures, or if the correction factor would be accurate, if fuels with a sulfur content higher than 0.8 wt% are used.[5]

We determined that the new PM standards are feasible based largely on the feasibility of the corresponding standards for land-based nonroad and locomotive applications, which have a 0.4 wt% sulfur upper limit for the test fuel. Since PM emissions are somewhat fuel sulfur-dependent, we do not believe it is appropriate to require compliance with the PM standards using fuel with a sulfur content above 0.4 wt%. We are therefore allowing a correction of PM emissions for testing with a fuel sulfur content greater than 0.4 wt%. Thus, the measured PM emissions for any test performed using fuel with a sulfur content of greater than 0.4 wt% may be corrected to the level that would have been measured if the fuel had a sulfur content of 0.4 wt%. This does not apply to systems using aftertreatment technologies, since the correction equation is not valid for those engines. This correction method is the same as that used for land-based nonroad engine testing to Tier 1 emission standards. Moreover, in the nonroad rulemaking, for engines rated over 37 kW certified to Tier 2 standards, we agreed to use only fuel with sulfur levels up to 0.2 wt% for our testing. Because Category 1 marine engines are mostly derived from land-based nonroad engines, we believe it is appropriate to extend this provision to Category 1 marine engines for the period during which they rely on land-based engines operating at Tier 2 emission

[4] ''In-Use Marine Diesel Fuel,'' Final Report by ICF Consulting Group for EPA, August 1999 (Docket A–97–50, document IV–A–4).

[5] ''Exhaust Gas Emission Measurements: A Contribution to a Realistic Approach,'' D. Bastenhof, dieselMAC, May, 1995.

levels. In the future effort to set marine Tier 3 emission levels, we will revisit the appropriate range of fuel properties for in-use testing in the context of the emission standards we set at that time.

4. Adjustable Parameters

Marine diesel engines are often designed with adjustable components to allow the engine to be adjusted for maximum efficiency when used in a particular application. This practice simplifies marine diesel engine production, since the same basic engine can be used in many applications. We recognize the need for this practice, but are also concerned about varying emission levels across the range of adjustment. We are therefore generally requiring that engines meet the emission standards when operated anywhere within the adjustable range (see 40 CFR 94.205). In most cases, this means engine manufacturers will be required to design their engines to prevent adjustments outside the specified range to ensure that engines are always operated within the specified range of adjustment. However, consistent with the approach used in the locomotive rule, we may allow manufacturers to specify in their applications for certification a narrower range of adjustment for these components across which the engine is certified to comply with the applicable emission standards, and demonstrate compliance across that range. For these engines, this allowance means that a manufacturer would specify a range of fuel injection timing, for example, over which the engine complies with the emission standards. This range could be designed to account for differences in fuel quality. Operators are then prohibited by the anti-tampering provisions from adjusting engines outside of this range.

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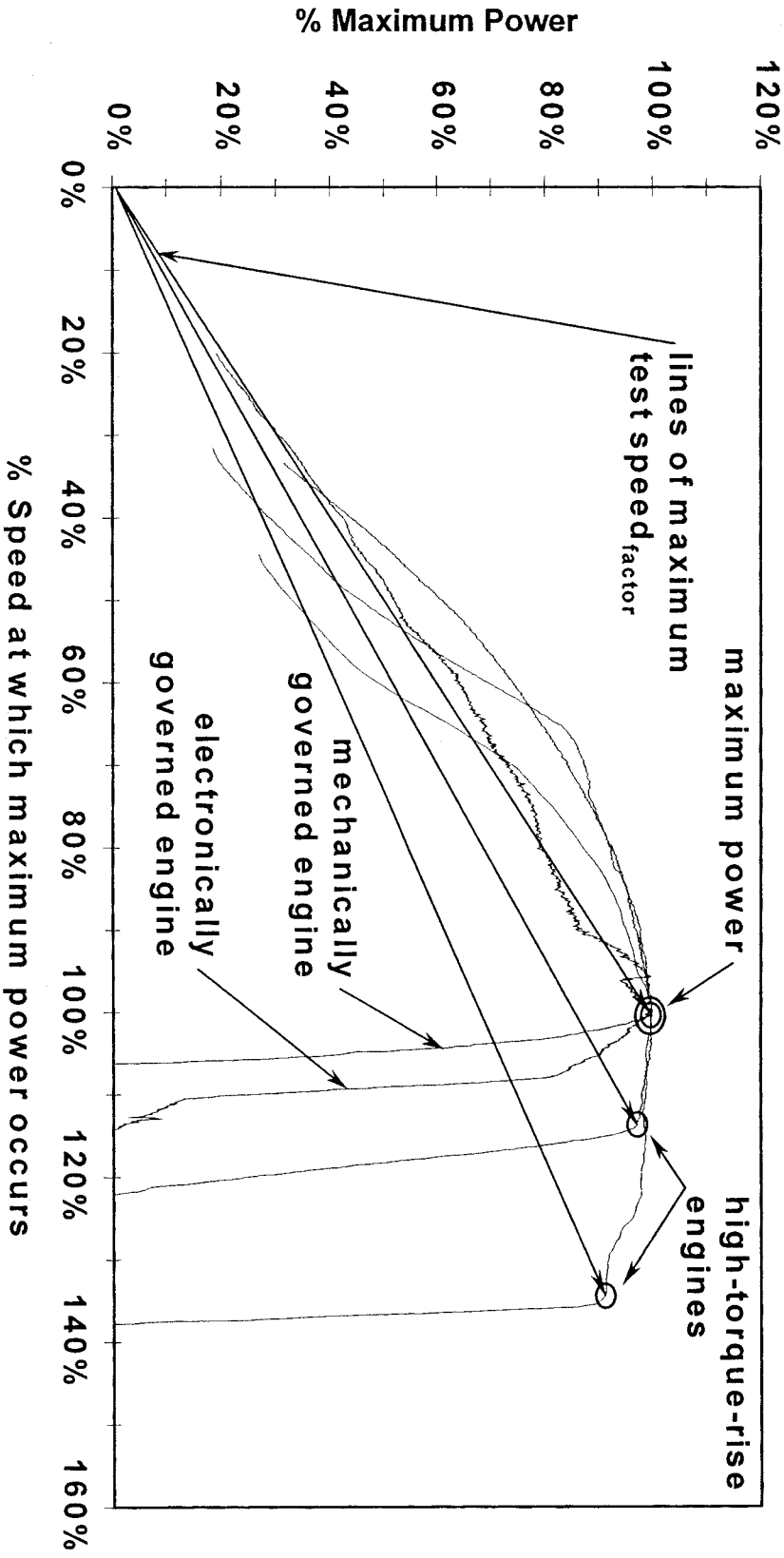

Figure 1: Example of normalized maximum-power versus speed curves. Maximum test speeds are circled.

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5. Determination of Maximum Test Speed

The determination of maximum test speed, where speed is the angular velocity of an engine's crankshaft (usually expressed in revolutions per minute, or rpm) is an important aspect of the duty cycles and ''not-to-exceed'' (NTE) zones described in this document (see also 40 CFR 94.107). We define the maximum test speed of an engine as the single point on an engine's maximum-power versus speed curve that lies farthest away from the zero-power, zero-speed point on a normalized maximum-power versus speed plot. In other words, consider straight lines drawn between the origin (speed = 0, load = 0) and each point on an engine's maximum-power versus speed curve (see Figure 1). Maximum test speed is defined as that point where the length of this line reaches its maximum value. Examples of results from this calculation are illustrated by circles superimposed on four maximum-power versus speed curves in Figure 1.

G. Not-to-Exceed Standards and Related Requirements

Our goal is for engines to control emissions over the broad range of in-use speed and load combinations that can occur on a vessel, achieving real-world emission reductions, rather than just controlling emissions under certain laboratory conditions. An important tool for achieving this goal is an in-use program with an objective standard and an easily implemented test procedure. Historically, we have taken the approach of setting a numerical standard on a specified test procedure and relying on the prohibition of defeat devices to ensure in-use control over a broad range of operation not included in the test procedure.[6]

No single test procedure can cover all real world applications, operations, or conditions. Yet to ensure that emission standards provide the intended benefits in use, we must have a reasonable expectation that emissions under real world conditions reflect those measured on the test procedure. The defeat device prohibition is designed to ensure that emissions controls are employed during real world operation and not just under laboratory or test procedure conditions. However, the defeat device prohibition is not a quantified standard and does not have an associated test procedure, so it does not have the clear objectivity and ready enforceability of a numerical standard and test procedure. As a result, the current focus on a standardized test procedure makes it harder to ensure that engines will operate with the same level of control in the real world as in the test cell.

Because the E3 duty cycle uses only four modes on an average propeller curve to characterize marine diesel engine operation, we are concerned that an engine designed to the duty cycle would not necessarily perform the same way over the range of speed and load combinations seen on a vessel. The E3 duty cycle is based on an average propeller curve, but a propulsion marine engine may never be fitted with an ''average propeller.'' For instance, a light vessel with a planing hull may operate at lower torques than average while the same engine operated on a heavy vessel with a deep displacement hull may operate at higher torques than average. This can largely be a function of how well the propeller is matched to the engine and vessel. A planing hull vessel can operate at high torques at low speed prior to planing.

To ensure that emissions from propulsion engines are controlled over the full range of speed and load combinations seen on vessels, we are establishing a zone under the engine's power curve where the engine may not exceed a specified emission standard, for any of the regulated pollutants, under the kind of operation that could reasonably be expected to be seen in the real world. In addition, the whole range of real ambient conditions is included in this ''not-to-exceed'' (NTE) zone testing. The NTE zone, limit, and ambient conditions are described below.

At the time of certification, manufacturers would have to submit a statement that its engines will comply with these requirements under all conditions that may reasonably be expected to occur in normal vehicle operation and use. The manufacturer must provide a detailed description of all testing, engineering analysis, and other information that forms the basis for the statement. This certification statement must be based on testing and/or research reasonably necessary to support such a statement and on good engineering judgment. This supporting information would have to be submitted to us at certification if we request it; manufacturers would not necessarily be required to submit NTE test data for compliance during certification.

We believe there are significant advantages to taking this sort of approach. The test procedure is very flexible so it can represent many in-use speed and load combinations and ambient conditions. Therefore, the NTE approach takes all of the benefits of a numerical standard and test procedure and expands it to cover a broad range of conditions. Also, laboratory testing makes it harder to perform in-use testing since either the engines would have to be removed from the vessel or care would have to be taken that laboratory-type conditions can be achieved on the vessel. With the NTE approach, in-use testing and compliance become much easier since emissions may be sampled during normal vessel use. Because this approach is objective, it makes enforcement easier and provides more certainty to the industry of what is expected in use versus over a fixed laboratory test procedure.

Even with the NTE requirements, we believe it is still important to retain standards based on the steady-state duty cycles. This is the standard that we expect the certified engines to meet on average in use. The NTE testing is more focused on maximum emissions for segments of operation and should not require additional technology beyond what is used to meet the new emission standards. We believe that basing the emissions standards on a distinct cycle and using the NTE zone to ensure in-use control creates a comprehensive program. In addition, the steady-state duty cycles give a basis for calculating credits for use in the averaging, banking, and trading program.

The NTE zone for marine diesel engines certified with the E3 duty cycle is illustrated in Figure 2 and is defined by the power curve of the engine up to rated speed. This zone is based on the range of conditions that a marine diesel propulsion engine typically experiences in use. For variable-speed engines with variable-pitch propellers certified to the C1 duty cycle, this zone is extended to include all torque points between the E3 power curve (between 63 percent and 100 percent speed) and the lug curve. These NTE zones are divided into two subzones above and below 45% of power at maximum test speed.

[6] EPA letter from Jane Armstrong and Bruce Buckheit, October 15, 1998.

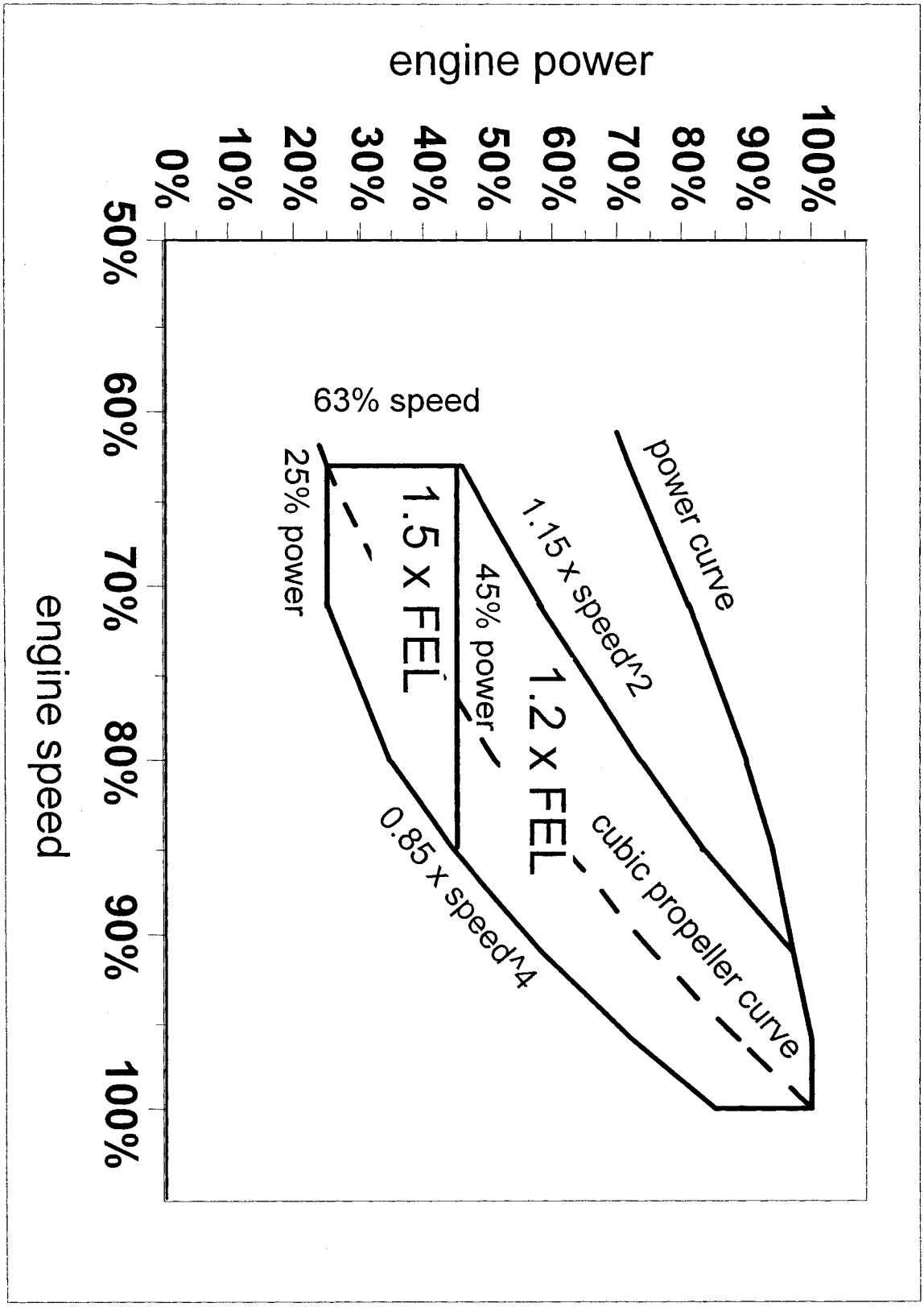

Figure 2: Not-to-Exceed Zone for E3 Engines

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We are requiring a similar approach for engines certified using the constant-speed E2 duty cycle. In this case, the ''not-to-exceed'' zone is at the speed for which the engine is designed to operate for loads ranging from 25 to 100 percent of maximum load at that speed. Because a constant speed can actually operate over a small range of engine speeds in-use, the NTE zone includes this small range of speeds. This zone is also split into subzones above and below 45% of maximum power. More detail on the development of the boundaries and conditions associated with the NTE zones may be found in Chapter 3 of the Final RIA.

We are requiring emissions caps for the NTE zones that represent a multiplier times the weighted test result used for certification for all of the regulated pollutants ($HC+NO_X$, CO, and PM). This is consistent with the concept of a weighted modal emission test such as the steady-state tests included in this rule. The standard itself is intended to represent the average emissions under steady-state conditions. Since it is an average, some points can be higher, some lower, and the manufacturer will design to maximize performance and still meet the engine standard. The NTE limit is on top of this. It is designed to make sure that no part of the engine operation and that no application goes too far from the average level of control.

For propulsion engines certified to the E3, C1, and E2 duty cycles, we believe that a not-to-exceed limit of 1.2 times the emissions standard (or FEL) is appropriate for the subzone at or above 45% of maximum test power. Below 45% of maximum test power, the cap is 1.5. Data presented in Chapter 3 of the Final RIA show that these limits are feasible for marine diesel engines, yet challenging because of variations in emissions at high versus low speeds and loads for some engines. This data show that the 1.2 cap is easily achievable at higher power, but may be more challenging at low powers. We set the cap at 1.5 below 45% of maximum test power for this reason. These subzones and caps apply equally to the Tier 2 emission standards for each regulated pollutant. Manufacturers may alternatively choose to comply with a cap of 1.25 over the whole zone, as we originally proposed. In any future tier of standards, we will review the appropriateness of tailoring the NTE approach to the unique characteristics of the individual exhaust constituents.

When testing the engine within the NTE zone, only nominally steady-state operation will be considered. It is unlikely that transient operation is necessary under the NTE provisions to ensure that emissions reductions are achieved for commercial marine diesel engines. We designed the NTE zones to contain the operation near an assumed propeller curve that the steady-state cycles are intended to represent. We believe that the large majority of commercial marine operation in the NTE zone is steady-state. For planing vessels, we believe the transient operation as a vessel comes to plane generally is along the torque curve and would not be within the NTE zone. However, we don't have enough data to reliably say where under the torque curve marine engines operate during transient operation. Also, we do not believe the NTE zone should include areas where an engine may operate during transients but not in steady-state modes. We therefore don't believe that adding transient operation to the NTE requirements is necessary at this time. This would change if we saw evidence that in-use emissions increase due to insufficient emission control under transient operation.

The NTE standards apply under any ambient air conditions. Within the following air temperature and humidity ranges, no corrections will be allowed to account for the effects of temperature or humidity on emissions: 13–30°C for ambient air temperature and 7.1–10.7 grams water per kilogram of dry air for humidity. For engines drawing intake air from an enclosed engine room, however, the high end of the air temperature range is 35°C (measured as intake air temperature). Ambient water temperature must be in the range of 5–27°C during NTE testing. In addition, the engines must comply with the standards for the full range of test fuel specifications. These ranges for ambient conditions are discussed in more detail in Chapter 3 of the Final RIA.

The defeat device provisions established for highway and nonroad engines apply to marine diesel engines in addition to the NTE requirements. A design in which an engine met the standard at the steady-state test points but was intentionally designed to approach the NTE limit everywhere else would be considered to be defeating the standard, except under limited circumstances discussed below. Electronic controls that recognize when the engine is being tested for emissions and adjust the emissions from the engine would be another example of a defeat device, regardless of the emissions performance of the engine.

We are aware that marine diesel engines may not be able to meet the emissions limit under all conditions. Specifically, there are times when emission control must be compromised for startability or safety. We have excluded engine starting from NTE testing. In addition, our defeat device provisions accommodate the manufacturers potential need to allow emissions to increase to the extent necessary to protect the engine, such as responding to engine overheating.

Manufacturers may ask us to approve an adjusted size or shape of the NTE zone for certain engines if they can show us that the engines will only operate within the revised NTE zone in normal use. This way, manufacturers can avoid testing their engines under operation they would rarely experience in a vessel. However, manufacturers are still responsible for any engine operation seen in normal use. They are also responsible for ensuring that their specified operation is indicative of real-world operation. In addition, if a manufacturer designs an engine for operation at speeds and loads outside of the NTE zone, the manufacturer is responsible for notifying us so their NTE zone can be modified appropriately to include this operation.

We are not in this final rule setting an NTE limit for auxiliary marine engines. We do not yet have enough data on the operating characteristics of auxiliary engines to determine NTE zones and the associated limits for these engines. We expect to pursue similar requirements for land-based nonroad diesel engines. If we adopt NTE requirements for land-based nonroad diesel engines, we expect to extend those provisions to marine auxiliary engines at the same time.

The NTE provisions will go into effect in the 2010 model year for post-manufacture marinizers and in the 2007 model year for other manufacturers for all commercial marine diesel engines. Manufacturers have agreed to collect and show us data on their engines operating in the NTE zone before the NTE standards take effect. We may also choose to require them to give us this data under § 208 of the Clean Air Act. This delay in implementation of the NTE provisions for most Category 1 engines will provide reasonable lead time by allowing more time to collect data and assess engine operation in the NTE zone. For larger engines, the early banking program will provide manufacturers with an incentive to produce low-emission engines prior to 2007. This way, if these manufacturers chose to stagger their product line and produce low emission engines early, they will be able to add NTE-type testing to the testing they perform while calibrating their engines.

H. Voluntary Low-Emitting Engine Program

In the final rule for land-based nonroad diesel engines, we included a program of voluntary standards for low-emitting engines, referring to these as ''Blue Sky Series'' engines (63 FR 56967, October 23, 1998). We are setting similar voluntary standards as part of this rulemaking. The program, if successful, will lead to the introduction and more widespread use of these low-emission technologies. The qualifying emission levels are listed in Table 4. The voluntary standards for the expanded subcategories above 15 L/cyl all follow the pattern of a 40 percent reduction relative to the mandatory standards. While the Blue Sky Series emission limits are voluntary, a manufacturer choosing to certify an engine under this program must meet all the provisions established to demonstrate compliance with these limits, including allowable maintenance, warranty, useful life, rebuild, and deterioration factor provisions.

TABLE 4.—VOLUNTARY EMISSION STANDARDS (G/KW-HR)

Engine size	$HC+NO_X$	PM
Power ≥37 kW, and displ.<0.9 L	4.0	0.24
0.9 L ≤displ.<1.2 L	4.0	0.18
1.2 L ≤displ.<2.5 L	4.0	0.12
2.5 L ≤displ.<5 L	5.0	0.12
5.0 L ≤displ.<15.0 L	5.0	0.16
15.0 L ≤disp. <20.0 L, and power <3300 kW	5.2	0.30
15.0 L ≤disp. <20.0 L, and power ≥3300 kW	5.9	0.30
20.0 L ≤disp. <25.0 L	5.9	0.30
25.0 L ≤disp. <30.0 L	6.6	0.30

The Blue Sky Series program begins immediately upon publication of this final rule and continues through the 2010 model year. We intend to evaluate the program to determine if it should be continued for 2011 and later engines, and if so, whether any changes are needed.

Creating a program of voluntary standards for low-emitting engines, including testing and durability provisions to help ensure adequate in-use performance, will be a major step forward in advancing innovative emission control technologies, because EPA certification will provide protection against false claims of environmentally beneficial products. For the program to be most effective, however, incentives for the production of these engines must be created as well.

We are concerned that such incentive programs not lead to a net detriment to the environment through the double-counting of benefits. We have therefore concluded that manufacturers choosing to sell an engine with the Blue Sky Series designation should not generate averaging, banking, and trading credits for demonstrating compliance with EPA programs. Other groups are free to design credit programs without concern for any double-counting or other unintended effect of overlapping programs.

In addition to credit-based programs, we see substantial potential for users and state and local governments to establish incentive programs. For example, state or local governments or individual ports may be able to add incentives for introducing low-emitting engine technologies in harbor and other coastal vessels.

I. Durability

As directed by the Clean Air Act, we are requiring that manufacturers design and build engines with durable emission controls. This means that manufacturers are responsible for the emission results for the engines they produce throughout their useful life.[7] We are also establishing provisions to ensure proper maintenance and repair of engines throughout their lifetime. The durability provisions, described below, are intended to ensure that engines continue to meet the applicable standards in use. The specific areas of the durability program focused on here are useful life, warranty periods, deterioration factors, and rebuilding requirements. Most of these provisions are carried over from the land-based or locomotive programs.

1. Useful Life

Useful life is the period during which the marine engine is required to meet the emission standards. For Category 1 engines, we are setting a minimum useful life of 10 years or 10,000 hours of operation. Specifically, the 10,000-hour requirement is based on an expected five-year period until the first time the engine is rebuilt, and an expected usage rate of 2,000 hours per year. For Category 2 engines, we are setting a minimum useful life of 10 years or 20,000 hours of operation. In this case, the 20,000-hour requirement for marine engines is calculated based on an operating rate of 4,000 hours of use per year, with five years between rebuilds. The useful life figures are minimum values to take into account the possibility that manufacturers may in the future design their engines for a longer period of operation before rebuilding. If an engine is designed to be in service until rebuild longer than our minimum useful life period, then the manufacturer must specify a corresponding longer useful life for that engine family.

The above approach of basing useful life on time to first rebuild was chosen because it is difficult to justify holding the engine manufacturer responsible for an engine's emissions after the engine is rebuilt. The original engine manufacturer has little, if any, control over the rebuild process. When done improperly, the rebuilding process can include changes to the engine that adversely affect emissions. At the same time, however, these engines are often kept in service much longer than the minimum useful life. Median values for service lives are 15 years for Category 1 propulsion engines and 23 years for Category 2 engines. These longer service lives mean that the engine may be exempt from in-use testing for more than half its service life. We therefore believe it is important to be able to conduct recall testing on these engines throughout the established useful life period. We are also establishing requirements for engine rebuilders.

To address the possibility of light commercial applications with much shorter design lifetimes, the final rule allows manufacturers to request a

[7] This is different from the approach used in MARPOL Annex VI, according to which manufacturers must ensure their engines meet the emission limits at the time of certification but ship owners become responsible for their continued compliance with the limits. Under that program, compliance is verified during flag-state and port-state inspections.

shorter useful life for certain engines. Manufacturers in this case need to determine the alternate useful life based on the documented hourly service life of these engines in the field. This may in some cases be much less than 10,000 hours of operation. To prevent abuse of this provision, we won't approve any useful life less than 1,000 hours and we will require that the manufacturer display the certified useful life on the engine label. Also, the shortened useful life may not be less the manufacturer's recommended overhaul interval or mechanical warranty for that engine.

2. Warranty Periods

Tied to the useful life is the minimum warranty period imposed under the Clean Air Act. The warranty periods for marine diesel engines are based on the ratio of useful life and warranty periods established for land-based nonroad engines. Specifically, we are setting a warranty period that is 50 percent as long as the useful life (in both operating hours and years) for both Category 1 and Category 2 engines. Also, the emissions warranty may not be less than any mechanical warranties offered by the manufacturer. This applies whether the mechanical warranty is published or negotiated, and whether it is offered for a fee or at no extra charge. Table 5 summarizes the useful life and warranty values that apply.

We are also including defect reporting requirements in the final rule. We require engine manufacturers to tell us whenever they identify a specific emission-related defect in 25 or more Category 1 engines, consistent with the provisions that apply to highway and land-based nonroad engines. Similarly, we require notification for specific emission-related defects in 10 or more Category 2 engines, which is the same threshold that applies to locomotives. This is not limited to a single engine model or model year.

TABLE 5.—USEFUL LIFE AND WARRANTY PERIODS

Category	Useful Life		Warranty Period	
	Hours of operation	Years	Hours of operation	Years
Category 1	10,000	10	5,000	5
Category 2	20,000	10	10,000	5

3. Deterioration Factors

To further ensure that the emission standards are met in use, we require the application of a deterioration factor (DeF) in evaluating emission control performance during the certification and production-line testing process. The emissions from new engines are adjusted using the DF to account for the expected deterioration in emissions over the life of the engine due to wear and aging of the engine and emission controls. The resulting emission level (*i.e.,* the final deteriorated emission level) represents the expected emissions at the end of the useful life period. New emission control technologies such as aftertreatment, sophisticated fuel delivery controls, and some cooling systems, may lose some of their effectiveness as they age. DFs are already required for highway vehicles and engines, land-based nonroad engines, and locomotives. We are extending this approach to marine diesel engines.

Marine diesel engine DFs will be determined by the engine manufacturers in accordance with good engineering practices. Consistent with the land-based nonroad and locomotive programs, we are not specifying a detailed procedure. In generating DFs, however, manufacturers must observe some general guidelines and get our approval. In particular, the DF must be consistent with emissions increases observed in-use based on emission testing of similar engines. Additionally, the DF should be calculated for the worst-case engine calibration offered within the engine family.[8] DFs must be calculated as an additive value (*i.e.,* the arithmetic difference between emission level at full useful life and the emission level at the test point) for engines without exhaust aftertreatment devices. In contrast, DFs must be calculated as a multiplicative value (*i.e.,* the ratio of the emission level at full useful life to the emission level at the test point) for engines using exhaust aftertreatment devices. This is consistent with the DF requirements applicable to other diesel engines, based on observed patterns of emission deterioration.

It is not our intent to require a great deal of data gathering on engines that use established technology for which the manufacturers have the experience to develop appropriate DFs. New DF testing may not be needed where sufficient data already exists. However, we are applying the DF requirement to all engines to be sure that manufacturers are using reasonable methods to ascertain the capability of engines to meet standards throughout their useful lives. Consistent with the land-based engine programs, we will allow marine diesel engine manufacturers the flexibility of using carryover and carryacross of durability emission data from a single engine that has been certified to the same or more stringent standard for which all of the data applicable for certification has been submitted. In addition, we are allowing deterioration data from highway or land-based nonroad engines to be used for similar marine diesel engines.

Service accumulation is necessary to generate DFs from engines in the laboratory. Consistent with the land-based nonroad rule, we are specifying minimum allowable maintenance intervals for marine diesel engine service accumulation to ensure that durability data represent in-use performance (see 40 CFR 94.211(e)). These minimum intervals for marine diesel engines are equivalent to those required for nonroad and highway diesel engines (40 CFR 89.109; 40 CFR 86.094–25). For Category 2 engines, we will allow engine manufacturers to request alternate minimum maintenance intervals at the time of certification, subject to our approval. This allowance for Category 2 engines is necessary to allow harmonization with locomotive maintenance practices (63 FR 18978, April 16, 1998).

4. Rebuilt Engines

It is common for marine diesel engines to be rebuilt several times during the course of their lifetimes. Similar to land-based nonroad engines, we have two concerns regarding the rebuilding of marine diesel engines. First, there may not be an incentive to check and repair emission controls that do not affect engine performance. Second, there may be an incentive to rebuild engines to an older

[8] The worst case would be the engine calibration expected to generate the highest level of emission deterioration over the useful life, using good engineering judgement.

configuration due to real or perceived performance penalties associated with technologies used to meet the new emission standards. Such practices would likely result in increased emissions. To address these concerns, we are extending the land-based nonroad rebuild requirements to marine diesel engines. Under these requirements, the parties involved in the process of rebuilding or remanufacturing engines must follow specific provisions to avoid tampering with the engine and emission controls. This requirement is based on the statutory prohibition against tampering with regulated engines. The rebuild requirements apply to any engine built on or after the date that new emission standards apply to that engine's specific category or group, regardless of the emission levels that the individual engine is designed to achieve.

Anyone who rebuilds engines, in whole or part, and fails to comply with these provisions may be liable for tampering. Individuals or companies are responsible for the activities over which they have control. Therefore, there may be more than one responsible party for a single engine in cases where different parties perform different tasks during the engine rebuilding process (e.g., engine rebuild, full engine assembly, installation). We are not including any certification or in-use emissions requirements for the rebuilder or engine owner.

We are adopting modest record keeping requirements that should be in line with customary business practices. People involved in the process of marine diesel engine rebuilding or remanufacturing will keep the records. The required records include the hours of use accumulated on the engine at the time of rebuild and a list of the work performed on the engine or related systems. For work performed on the engine, rebuilders must include a list of replacement parts used, engine parameter adjustments, design element changes, and a description of any work performed. Parties must keep the information for two years and may use any format or system, provided that the information can be readily understood by an EPA enforcement officer. We do not require that companies keep information that is not reasonably available through normal business practices. In cases where it is customary practice to keep records for engine families rather than specific engines, where the engines within that family are being rebuilt or remanufactured to an identical configuration, such record keeping practices are satisfactory. Rebuilders may use records such as build lists, parts lists, and engineering parameters that they keep of the engine families being rebuilt rather than on individual engines, provided that each engine is rebuilt in the same way to those specifications.

5. Replacement Engines

There may be situations in which a marine diesel engine can or must be replaced with a new engine. In general, we require that these replacement engines meet the certification requirements that apply to new engines for the year it is manufactured. The final rule makes provision for engine manufacturers to produce new engines to replace an older, uncertified model, where the replacement engine doesn't need to comply with the emission standards that would otherwise apply to new engines. This exemption for replacement engines is available if no new, compliant engine is available that meets the physical and performance characteristics of the engine being replaced (subject to our approval). There is no exemption for engines that are replacing certified engines. Consistent with replacement engine provisions in other programs, some additional constraints ensure that companies do not circumvent the regulations.

J. Certification

As discussed previously, we expect technology to be shared between land-based engines and marine engines. Some engine manufacturers will likely produce engines of the same basic design for sale in both areas. Specifically, we expect Category 1 marine engines to share the technology developed for land-based nonroad engines, and Category 2 engines to share technology developed for locomotive engines. To account for this product overlap, we are basing certification data and administration requirements for Category 1 on the existing program for land-based nonroad engines, and for Category 2 marine engines on the existing program for locomotive engines.[9] Specific certification provisions are discussed more fully in the following sections.

1. Engine Family Definition

Engine grouping for the purpose of certification is accomplished through the application of an ''engine family'' definition. Engines expected to have similar emission characteristics throughout the useful life are classified in the same engine family. Separate engine family classification is also required for each marine engine category (*i.e.*, Categories 1, 2, and 3 will be in separate engine families). We are establishing specific parameters to define engine family for each category of marine engine. To provide for administrative flexibility, we may separate engines normally grouped together or to combine engines normally grouped separately based upon a manufacturer's request substantiated with an evaluation of emission characteristics over the engine's useful life.

For Category 1, we are using the engine family definition for land-based nonroad engines, with the addition of the type of fuel system and whether fuel injection is controlled mechanically or electronically. For Category 2, we are using the engine family definition for locomotive engines.

These definitions provide consistency between land-based and marine engines of the same basic type. The fuel system type and control type were added to the land-based nonroad engine family definition to reduce the variability of emissions within an engine family. This change will aid manufacturers in selecting the ''worst-case'' engine for emission testing. It will lessen the chance of noncompliance in use by ensuring that the highest emitting engine is tested during certification.

Under the provisions of the land-based nonroad rule, engine manufacturers have the option to petition for their marine engines to be included in land-based engine families. We are not including this flexibility for marine engines rated over 37 kW because the ''not-to-exceed'' provisions in this final rule apply uniquely to marine engines. We do, however, allow manufacturers to rely on the land-based certification for land-based engines that are marinized without affecting emissions (see Section II.F.).

The engine family definition is fundamental to the certification process and to a large degree determines the amount of testing required for certification. Manufacturers are required to estimate the rate of deterioration for each engine family (see Section IV.I.3. for further details). Compliance with the emission standard will also be demonstrated for each engine family based upon required testing and the application of the deterioration factor. Separate certificates of conformity are required for each engine family.

2. Emission Data Engine Selection

Manufacturers must select the highest emitting engine (*i.e.,* ''worst-case'' engine) in a family for certification

[9] See 40 CFR part 89, subpart B, for the provisions of the land-based nonroad engine program and 40 CFR part 92, subpart C, for the provisions of the locomotive program.

testing. In making that determination, the manufacturer must use good engineering judgement (considering, for example, all engine configurations and power ratings within the engine family and the range of installation options allowed). By requiring manufacturers to test the worst-case engine, we can be sure that all engines within the engine family are complying with emission standards for the least cost (as measured by the number of tests required). Manufacturers may request the separation of the dissimilar calibrations into separate engine families. This may be appropriate, for example, if a manufacturer feels that an engine family is grouped too broadly or that the worst-case emission data engine underestimates the emission credits available under the ABT provisions.

K. Production-Line Testing

One of the challenges of serial engine production is ensuring that each engine produced has the same emission characteristics as the original certification engine. We are finalizing a requirement for manufacturers to conduct production line testing (PLT). The general object of a PLT program is to show, with reasonable certainty, whether certification designs have been translated into production engines that meet applicable standards (or FELs) at the time of production, before excess emissions are generated in use. PLT is performed on a regular basis during the year by the engine manufacturer according to our criteria.

With PLT testing, a manufacturer selects engines from its production line for confirmatory testing. In general, a manufacturer must test one percent of its total projected annual U.S. marine diesel engine sales (propulsion and auxiliary) for each category each year. We believe that a one percent sampling rate is appropriate for the marine diesel engine industry because of its low production volumes, and that a higher sampling rate would be overly burdensome for this industry. We are not specifying a minimum number of tests for Category 1 engines. If a manufacturer sells fewer than 100 Category units in the United States in a given year, it is not required to do any PLT testing for those engines that year. For Category 2 engines, a manufacturer must conduct a minimum of one PLT test per year. Thus, for manufacturers with sales of less than 100 Category 2 engines in a given year, one test is required that year. For purposes of calculating the number of tests required, Category 1 and Category 2 annual engine sales must be considered separately.

The manufacturer selects a random sample of test engines that is representative of annual production. We reserve the right to reject any engines selected by manufacturers if we determine that such engines do not represent production engines. Engines selected should cover the broadest range of production possible, and from year to year should be varied to cover all engine families if possible. Tests should also be distributed evenly throughout the model year, to the extent possible.

Manufacturers must conduct emission testing of PLT engines in accordance with the applicable federal testing procedures. Compliance with the NTE provisions must be demonstrated as part of PLT testing. The results must be communicated to us in periodic reports that summarize emissions results, test procedures, and events such as the date, time, and location of each test. These reports allow us to continually monitor the PLT data. Reports must be submitted each quarter. If no testing is performed during the period, no report is required.

Under this testing scheme, if an engine fails a production line test, the manufacturer must test two additional engines out of either the next two days' production or the next fifteen engines produced in that engine family in accordance with the applicable federal testing procedures. This dual approach to testing additional engines accounts for variations in production volumes. If production volumes are high, then we believe the two-day provision will allow for the orderly selection of additional test engines. Likewise, if production volumes are low, then the provision allowing the engines to be selected from the next fifteen produced will allow for orderly selection. When the average of the three test results, for any pollutant, are greater than the applicable standard or FEL for any pollutant, the manufacturer fails the PLT for that engine family. Such failures must be reported to us within two working days of the determination of a failure. Note that compliance with the standards is required of every covered engine. Thus, every engine failing a PLT test is considered noncompliant with the standards and must be brought into compliance. Using the average of three tests to determine compliance with the PLT program serves only as a tool to decide when it is appropriate to suspend or revoke the certificate of conformity for that engine family, and is not meant to imply that not all engines have to comply with the standards.

In the PLT program, the Administrator can suspend or revoke the manufacturer's certificate of conformity, in whole or in part, thirty days after we determine that an engine family is noncompliant, or if the engine manufacturer's report reveals that the PLT tests were not performed correctly. During the thirty-day period after we establish noncompliance, we will coordinate with the manufacturer to facilitate the approval of the required production line remedy to eliminate the need to halt production as much as possible. The manufacturer must then address the noncompliance for the engines produced prior to the suspension or revocation of the certificate of conformity (for example, by bringing them into compliance or removing them from service). We can reinstate the certificate after a suspension, or reissue one after a revocation, if the manufacturer demonstrates through its PLT program that improvements, modifications, or replacements have brought the engine family into compliance. The regulations include hearing provisions that provide a mechanism to resolve disputes between manufacturers and us regarding a suspension or revocation decision based on noncompliance with the PLT. It is important to point out that we retain the legal authority to inspect and test engines if problems arise in the PLT program. Note also that the definition of ''failure'' of the PLT is limited to the PLT program, and does not define failure or noncompliance for other purposes. It is based in part on the severity of the result of a failure (suspension or revocation of a certificate) and is not meant to limit in any way the overall obligation of the manufacturer to produce engines that meet the standard.

We recognize the need for a PLT program that does not impose an unreasonable burden on manufacturers. Therefore, consistent with the requirement that testing be required on one percent of total marine diesel engine production for each category, no PLT is required for manufacturers whose Category 1 marine diesel engines sales are less than 100 per year. This is because companies with such low sales are unlikely to have in-house testing facilities, and requiring such companies to send an engine to an independent test facility for PLT purposes may be too burdensome. Note that companies exempt from the PLT program are not exempt from other certification and compliance provisions. Engines exempt from the PLT program must still meet the emission limits as produced and in use. We reserve the right to conduct an SEA on any manufacturer with engines certified to the requirements of this final rule. In addition, we are not extending

this flexibility provision to the PLT program for Category 2 marine diesel engines, since they are typically produced in very small volumes.

Finally, while we believe this PLT program takes into account the circumstances of this industry, we also understand that alternative plans may be developed that better account for the individual needs of an individual manufacturer. Thus, a manufacturer may submit an alternative plan for a PLT program, subject to our approval. A manufacturer's petition to use an alternative plan needs to address the need for the alternative and include justifications for the number and representativeness of engines tested. The alternative plan must also have specific provisions regarding what constitutes a PLT failure for an engine family.

L. Miscellaneous Compliance Issues

We are extending the general compliance provisions for land-based nonroad engines to Category 1 and Category 2 marine diesel engines. These include the tampering, defeat device, imported engines and vessels, and general prohibition provisions.

M. Averaging, Banking, and Trading Program

Along with the emission standards, we are including a marine averaging, banking, and trading (ABT) program. An ABT program is an important factor that EPA takes into consideration in setting emission standards that are appropriate under section 213 of the Clean Air Act. ABT reduces the cost and improves the technological feasibility of achieving the standards, helping to ensure the attainment of the standards earlier than would otherwise be possible. Manufacturers gain flexibility in product planning and the opportunity for a more cost-effective introduction of product lines meeting a new standard. ABT also creates an incentive for the early introduction of new technology, which allows certain engine families to act as trail blazers for new technology. This can help provide valuable information to manufacturers on the technology before manufacturers need apply the technology throughout their product line. This early introduction of clean technology improves the feasibility of achieving the standards and can provide valuable information for use in other regulatory programs that may benefit from similar technologies.

The voluntary ABT program allows the certification of one or more engine families within a given manufacturer's product line at emission levels above the applicable emission standards, provided that the increased emissions are offset by one or more families certified below the emission standards. The average of all emissions for a particular manufacturer's production (weighted by sales-weighted average power, production volume and useful life) must be at or below the level of the applicable emission standards. In addition to the averaging program just described, the ABT program contains banking and trading provisions, which allow a manufacturer to generate emission credits and bank them for future use in its own averaging program or sell them to another entity. Compliance is determined on a total mass emissions basis to account for differences in production volume, power and useful life among engine families.

The ABT program for marine diesel engines over 37 kW is based on the corresponding ABT programs recently adopted for land-based nonroad engines (63 FR 56967, October 23, 1998) and locomotives (63 FR 18978, April 16, 1998), which roughly correspond to the Category 1 and Category 2 engines, respectively. A manufacturer choosing to participate in the ABT program must certify each participating engine family to a family emission limit (FEL) determined by the manufacturer during certification testing. A separate FEL must be determined for each pollutant the manufacturer includes in the ABT program. The ABT program is limited to $HC+NO_X$ and PM emissions. Thus, only two different FELs may be generated for a given engine family.

Consistent with the recently finalized land-based nonroad engine program, marine engine credits are to be calculated based on the difference between the applicable standard(s) and FEL(s). However, credit calculation for marine engines is somewhat different than that for land-based nonroad engines, in that a load factor is inserted in the equation. This term is necessary because, contrary to land-based nonroad case, not all marine engines are expected to operate at the same load. The credit calculation equation is as follows:

$$\text{Emission credits} = (\text{Std}—\text{FEL}) \times (\text{UL}) \times (\text{Production}) \times (\text{AvgPR}) \times (10^{-6}) \times (\text{LF})$$

Where:

- Std = the applicable cycle-weighted marine engine $THC+NO_X$ and/or PM emission standard in grams per kilowatt-hour.
- FEL = the family emission limit for the engine family in grams per kilowatt-hour. (The FEL may not exceed the limit established in § 94.304(m) for each pollutant.)
- UL = the useful life in hours.
- Production = the number of engines participating in the averaging, banking, and trading program within the given engine family during the calendar year (or the number of engines in the subset of the engine family for which credits are being calculated). Quarterly production projections are used for initial certification. Actual applicable production/sales volumes are used for end-of-year compliance determination.
- AvgPR = average power rating of all of the configurations within an engine family, calculated on a sales-weighted basis, in kilowatts.
- LF = the load factor, dependent on whether the engine is intended for propulsion or auxiliary applications, as follows:

A. 0.69 for propulsion engines
B. 0.51 for auxiliary engines.

We are prohibiting the generation of credits for one pollutant and the simultaneous use of credits for the other pollutant within the same engine family. In other words, a manufacturer may not simultaneously generate $HC+NO_X$ credits and use PM credits on the same engine family, and vice versa. This is consistent with the recently finalized emission standards for land-based nonroad diesel engines. This also reflects the inherent trade-off between NO_X and PM emissions in diesel engines.

FEL upper limits apply in the same manner as those in the comparable land-based ABT programs to ensure that the emissions from any given family certified under this ABT program not be significantly higher than the applicable emission standards. In general, these FEL upper limits correspond to the existing previous tier of standards for the various classes. In other words, the FEL upper limits are generally the Tier 1 standards for engines certifying according to the ABT provisions relative to the Tier 2 standards. Since we are not including any Tier 1 standards for marine engines in this rulemaking, the land-based Tier 1 standards serve as FEL upper limits for the Tier 2 marine engine standards. When the ABT provisions for land-based nonroad engines were recently revised, there were no Tier 1 standards in place for some land-based categories and pollutants. These cases correspond to some Category 1 marine engines. In those cases we chose FEL upper limits based on typical in-use emission levels of precontrol engines, or existing

California Air Resources Board emission standards. For a more complete discussion of the rationale for the Tier 2 FEL upper limits for Category 1 engines the reader is directed to the most recent final rule concerning land-based nonroad engine emission standards.

Consistent with the land-based ABT programs from which the marine program is derived, ABT credits generated under this program do not expire and are not discounted. Also consistent with the recently finalized land-based nonroad diesel rule, credits generated on land-based engines may not be used for demonstrating compliance for marine diesel engines. We are concerned that manufacturers who produce engines used in both marine and land-based applications could effectively trade out of the marine portion of the program, thereby potentially obtaining a competitive advantage over small marinizers who sell only marine engines. For similar reasons, credits generated on Category 2 engines can not be used for Category 1 engine compliance. For similar reasons we proposed to prevent the use of credits generated on Category 1 engines from being used for Category 2 engines. Since the expressed concern does not apply to credit exchanges going from smaller to bigger engines, the final rule allows this. However, to account for the likelihood that Category 2 engines will undergo more rebuilds in their lifetime than Category 1 engines, manufacturers must discount any Category 1 engine credits by 25 percent if they are used for Category 2 engine compliance.

Effective immediately, early credit generation is available for all Category 1 and 2 commercial CI marine engines. Credits will be generated relative to the actual Tier 2 standards and will be undiscounted. However, if a manufacturer believes it should be allowed to generate credits relative to an engine family's pre-control emission levels (rather than the Tier 2 standards), it can choose to develop engine family-specific baseline emission levels. Credits will then be calculated relative to the manufacturer-generated baseline emission rates, rather than the Tier 2 standards. Engine manufacturers that are not post-manufacture marinizers generate baseline emission rates by testing three engines from the family for which the baseline is being generated, with the baseline calculated as the average of the three engines. Under this option, engines must still meet the Tier 2 standards for all pollutants to generate credits, but the credits will be calculated relative to the generated baseline rather than the Tier 2 standards. Any credits generated between a measured baseline and the Tier 2 levels will be discounted by reducing the measured baseline value by 10 percent. This is to account for the variability of testing in-use engines to establish the baseline due to differences in hours of use and maintenance practices.

Some early banking provisions apply uniquely to post-manufacture marinizers. In recognition of their small size, more difficult resource constraints and general reliance on engine manufacturers to produce base engines, additional flexibility is warranted to ease the transition to these rules. Therefore, post-manufacture marinizers may establish a measured baseline by testing a single engine. Consistent with the provisions of § 94.209(a), the baseline established by this single engine may be used for broadened engine families, provided the marinizer starts with certified land-based engines. Also, they may certify an engine under the early banking program with an engine that does not meet the Tier 2 emission standards. However, since this program is only intended to ease the transition to full compliance with these standards and rules, the credits will only be available to post-manufacture marinizers through the 2007 model years

In the recent rulemaking for nonroad diesel engines, we also set emission standards for marine diesel engines below 37 kW. These engines were also included in the land-based ABT program in that rule, with some restrictions. We are not changing the way we treat these small marine diesel engines. We are not integrating the ABT program in that rule with the requirements in this final rule, so we don't allow manufacturers to exchange credits for engines above and below 37 kW.

Credits may not be exchanged between Category 1 marine engine families and land-based nonroad engine families. As with the restriction of credit exchanges between engine families above and below 37 kW, this restriction applies because the stringency of the land-based standards was determined in the absence of the availability of credit exchange between marine and land-based engines. In addition, there are differences in the way that marine and land-based credits are calculated that are implicit in the calculation and that make the credits somewhat incompatible. The first is that the difference in test duty cycles means there is an implicit difference in load factor between the two. The second is that there are provisions in this final rule for varying useful lives of marine engine families, which are not included in the land-based nonroad regulations. In addition, as discussed above, the actual credit calculation equations for the two programs are different.

We don't allow trading between Category 2 engines and locomotive engines, because locomotive credits are calculated based on expected remaining service life (which could be many useful life periods, due to the inclusion of the remanufacturing provisions for locomotives), whereas Category 2 marine engine credits are only calculated on the basis of a single useful life.

Participation in the marine diesel ABT program is voluntary. For those manufacturers choosing to use the program, compliance for participating engine families is evaluated in two ways. First, compliance of individual engine families with their FELs is determined and enforced in the same manner as compliance with the emission standards in the absence of an averaging, banking and trading program. Each engine family must certify to the FEL (or FELs, as applicable), and the FEL is treated as the emission limit for certification, production-line and in-use testing (as well as for any other testing done for other enforcement purposes) for each engine in the family. Second, the final number of credits available to the manufacturer at the end of a model year after considering the manufacturer's use of credits from averaging, banking and trading must be greater than or equal to zero.

The generation transfer and use of credits in the ABT program does not change the obligation of all manufacturers to meet the applicable standards. This provision is consistent with other mobile source ABT programs. The marine diesel engine certificates of both parties involved in the violating trading transaction could be voided *ab initio* (*i.e.* back to date of issue) if the engine family or families exceed emission standards as a result of a credit shortfall. A buyer of credits which are shown later to be invalid will only be required to make up the credit shortfall. There will be no penalty associated with the unknowing purchase of invalid credits.

The integrity of the marine diesel averaging, banking and trading program depends on manufacturers' accuracy in recordkeeping and reporting and our effectiveness in tracking and auditing this information. Failure of a manufacturer to maintain the required records would result in the certificates for the affected engine family or families being voided retroactively. Violations of

reporting requirements could result in a manufacturer being subject to civil penalties as authorized by sections 213 and 205 of the Clean Air Act. We allow positive reporting errors (*i.e.,* those errors that result in an underestimation of the manufacturer's positive credit balance) to be corrected provided that the errors are identified within 180 days of the time we receive the manufacturer's annual report.

N. Special Provisions for Post-Manufacture Marinizers

In general, we set engine emission standards that take effect at a set point in time, concurrently precluding the installation in vehicles or equipment of engines not certified to the new standards. The rigidity of this approach is lessened to some extent through averaging, banking, and trading programs, which allow engine manufacturers to produce engines that exceed the emission limits as long as the added emissions can be offset by engines that emit below the required levels. While this approach generally works well, additional flexibility provisions to help relieve compliance burdens may be needed in special cases.

Marine diesel engines are produced using one of three basic manufacturing methods. In the first, least common, method, marine engines are designed and built exclusively for marine applications. This is typically the case for very large Category 3 engines as well as some smaller engines that are produced for special niche markets. In the second method, an engine manufacturer produces a marine diesel engine using a land-based engine that was built by that same manufacturer. In the third method, an unrelated company, referred to here as a ''marinizer'' produces a marine diesel engine by purchasing a completed or partially completed land-based nonroad or highway engine from an engine manufacturer and modifying it for use in the marine environment according to the marinizing company's own processes. Marinizers tend to be small companies and their output is often designed for niche markets. To address their concerns, we are adopting several provisions to streamline the certification process for marinizers.

1. Application of Flexibility Provisions

The following flexibility provisions will be available only to these marinizers. We define the term post-manufacture marinizer as ''an entity that produces a marine engine by modifying a non-marine engine, whether certified or uncertified, complete or partially complete, where such entity is not controlled by the manufacturer of the base engine or by an entity that also controls the manufacturer of the base engine.'' This definition no longer refers only to companies that ''substantially modify'' non-marine engines because the engine dressing exemption makes provision for companies whose marinization process does not include steps that might affect emissions.

A vessel manufacturer that substantially modifies a certified engine or an engine certified to a previous tier of emission limits or that installs an uncertified engine will be considered a marinizer and must comply with the certification and compliance provisions in this final rule. This clarification is necessary because it is not uncommon for vessel manufacturers to modify marine engines. This may be done to increase the power of an engine or to respond to the needs of a particular user. By considering these vessel manufacturers as marinizers, we will ensure that the engine modifications do not also increase the emissions of an otherwise certified engine.

2. Broader Engine Families

We are allowing marinizers to use a broad engine family definition. Under this provision, a marinizer may include any engines that have similar emission deterioration characteristics in one engine family. Thus, a marinizer could conceivably group all commercial marine diesel engines into one engine family. These engines must all be in the same category and they must be previously certified to meet land-based nonroad, locomotive, or heavy-duty highway emission standards. Separate engine families will be required for each category of marine engines

Note that all other provisions of the final rule apply to this broad engine family including, but not limited to, selection and testing of an emission data engine, application of a deterioration factor (DF), and compliance with the standards.

Even with these larger engine families, marinizers are responsible to conduct testing on a worst-case engine. We can suggest some guidelines for identifying worst-emitter engines without the expense of conducting a full emission test on each engine calibration of each model.

Marinizers can utilize low-cost equipment and a simple procedure to routinely measure parts per million (ppm) levels of gaseous pollutants. We expect that every company operates most or all production engines for quality control purposes, probably with a small number of fixed cycles. Measuring for NO_X emissions during that time provides an additional diagnostic for engine performance, and should provide a good benchmark for comparing emission levels across the product line. Measured ppm NO_X readings should correlate closely with NO_X emission levels from a full certification test. Conversely, the lowest measured NO_X emissions (or highest CO emissions) are an indication of the worst PM emitter. The marinizer may choose to send in test data from a single duty cycle on a single engine, but remains liable for all pollutants on all engines in the family, with any applicable duty cycle.

This guidance suggests a possible means by which a post-manufacture marinizer can limit the testing burden in the effort to certify broad engine families where it may not be apparent which engine to test. If this does not address a marinizer's concerns, the remaining alternative is to certify each engine family, using the standard engine-family definition.

3. Carryover Provisions

Engine manufacturers may carry over engine data generated in a previous model year's certification to certify for the current year. This provision will also apply to the broader engine families of marinizers, with the constraint that the marinizer will need to generate new data if any model in the broad engine family is modified in any way that will make it the highest emitter in the family.

4. Streamlined Certification for Subsequent Years

We are adopting a streamlined certification process for marinizers. This process applies beginning with the year after the relevant implementation dates and continues until engine design changes cause a different engine model to be the highest emitter in the marinizer's broad engine family. Recertification would be required at that point. Under this streamlined certification process, the marinizer submits an annual certification application stating that there have been no changes in the design or production of the engine models that make up the engine family. If there have been changes, the marinizer can still avoid a complete certification submission with test data by demonstrating that there is no change in the identity of the highest emitter or its emissions.

5. Additional Compliance Time

Marinizers generally depend on engine manufacturers producing base engines for marinizing and may therefore be affected by circumstances

beyond their control. This can make it difficult to certify the marinized engines. Consequently, there may be situations in which, despite its best efforts, a marinizer cannot meet the implementation dates, even with the flexibility provisions described in this section. Such a situation may occur if an engine supplier without a major business interest in a marinizer were to change or drop an engine model very late in the implementation process, or was not able to supply the marinizer with an engine in sufficient time for the marinizer to recertify the engine. Based on this concern, we are allowing a one-year delay in the implementation dates for post-manufacture marinizers. In this case, marinizers would need only notify us that they are using the additional year before meeting emission standards.

A similar need for additional lead time is appropriate for post-manufacture marinizers to demonstrate compliance with Not-to-Exceed requirements. Post-manufacture marinizer's reliance on another company's base engines affects the time needed for the development and testing work needed to comply. As described above, engine manufacturers generally have until 2007 to comply with Not-to-Exceed requirements. We are extending that to 2010 for post-manufacture marinizers. Three years of extra lead time (compared to one year for the primary certification standards) is appropriate considering their more limited resources.

6. Special Hardship Provision

As a relief mechanism of last resort, we are also extending to post-manufacture marinizers the hardship relief provisions we included in the recently finalized land-based nonroad rule (see 40 CFR 89.102(f)). Under this provision, marinizers can ask us for additional time to meet the emission limits. Under this hardship relief provision, appeals must be made in writing, be submitted before the earliest date of noncompliance, include evidence that failure to comply was not the fault of the marinizer (*e.g.,* a supply contract was broken by the engine supplier), and include evidence that the inability to sell the subject engines will have a major impact on the company's solvency. We would work with the applicant to ensure that all other remedies available under the flexibility provisions are exhausted before granting additional relief, and limit the period of relief to no more than one year. Furthermore, any relief may not exceed one year beyond the date relief is granted. We expect that this provision will be used only rarely. Each granting of relief would be treated as a separate agreement, with no prior guarantee of success, and with the inclusion of measures, agreed to in writing by the marinizer, for recovering the lost environmental benefit. If a marinizer during this hardship period produces certified engines (to emission levels less stringent than would otherwise be required), we would take that into account in determining the lost environmental benefit. This provision is not limited to small businesses, as described in the proposal, since all post-manufacture marinizers have a similar reliance on other manufacturers to produce their engines.

7. Incomplete Marine Engine Exemption

We finalized the nonroad diesel rule with no allowance to import uncertified nonroad engines that will be changed into a marine engine. This final rule is changing the definition of marine engines to include those that are ''intended'' to be installed on a marine vessel. This is necessary to allow post-manufacture marinizers to import loose engines for marinizing. We also include provisions specifically allowing post-manufacture marinizers to import uncertified engines. Once emission standards apply, a marinizer importing such engines must already have a certificate showing that the engine is part of a certified engine family. The regulations also obligate the marinizer to modify all the imported engines to comply with the requirements of 40 CFR part 94.

V. Technological Feasibility

The emissions standards in this final rule apply to a large variety of marine diesel engine sizes and applications. Section 213(a)(3) of the Clean Air Act directs us to establish standards that provide the ''greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the engines or vehicles to which such standards apply, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers and to noise, energy, and safety factors associated with the application of such technology.''

We have concluded that the requirements in this final rule are appropriate under section 213 of the Clean Air Act and are technologically feasible on the prescribed schedule. The Final RIA and the Summary and Analysis of Comments contain a detailed treatment of emission-control technologies and the basis for selecting the individual standards. The costs associated with these technologies are discussed in Section VII. We have also concluded, as described in the Final RIA, that the emission standards will have no significant negative effect on noise, energy, or safety.

VI. Areas for Future Action

A. Tier 3 Emission Standards

We have decided not to finalize the proposed Tier 3 emission standards at this time. We intend to address this next tier of emission standards through a separate final rule. This may involve a supplemental proposal. Delaying action on Tier 3 standards will allow us to learn from the application of Tier 3 technology to land-based nonroad diesel engines. Also, it will give us time to consider emission control strategies such as aftertreatment.

B. Emission Standards for Remanufactured Engines

As described in the proposed rule, we are aware of the obstacles to implementing emission standards that would apply to existing engines at the point of rebuild or remanufacture. The comments in favor of such standards did not address these questions. Nevertheless, we are concerned that the gradual turnover to new engines and vessels will cause a very slow introduction of new technologies. As new technologies become available to comply with MARPOL Annex VI emission standards and the emission standards in this final rule, we are hopeful that emission controls on new engines will improve even before our standards take effect. Our early banking provisions add an incentive for this to occur.

To the extent that we observe companies not taking reasonable measures to introduce emission control technologies, we will need to reconsider the importance of setting standards on remanufactured engines. In contrast, introduction and use of emission control technologies ahead of the regulated schedule may reduce the need for a control program for these engines.

C. NTE Requirements for Auxiliary Engines

We are not at this time finalizing NTE requirements for auxiliary marine engines in this final rule. We are contemplating, however, to establish NTE requirements for similar land-based nonroad diesel engines. When we adopt such requirements for nonroad diesel engines, we expect to apply the same provisions, including zones and caps, to auxiliary marine diesel engines at the same time.

D. Application of Provisions to Marine Diesel Engines Less than 37 kW

Marine diesel engines less than 37 kW were included in the rulemaking for nonroad diesel engines and are subject to the emission control program contained in 40 CFR Part 89. That program has two tiers of emission limits, phased in from 1999 to 2000 for Tier 1 and 2004 to 2005 for Tier 2. In general, marine diesel engines less than 37 kW are subject to the same certification and compliance program as land-based nonroad diesel engines. Exceptions to this general approach include the duty cycle (E3, but with a C1 option), ABT program restrictions (land-based credits cannot be used to offset marine diesel emissions), and implementation flexibility provisions that allow post-manufacture marinizers to phase in compliance with Tier 1 emission limits according to the schedule extended to nonroad equipment manufacturers.

We intend eventually to consolidate the smaller engines in a general marine diesel engine regulation. Consolidating existing requirements without reopening those issues may, however, cause confusion. Commenters did not feel strongly that there would be an advantage to combining programs, so we are not consolidating them at this time. We will likely pursue the next tier of emission standards (i.e., Tier 3) for all marine diesel engines together. This way we will be able to integrate the requirements for varying engines sizes in the most sensible way.

E. Category 3 Engines

State and environmental organization commenters have made clear in their comments that they are eager to see greater emission reductions from Category 3 engines, including PM emissions. These commenters are particularly concerned that the MARPOL NO_X limits are not stringent enough to appreciably reduce NO_X inventories and ozone levels. Chapter 5 of the Final RIA describes the expected NO_X reductions from the MARPOL Annex VI limits in more detail. There is enough foreign vessel traffic in U.S. ports that these engines contribute substantially to local air pollution in port areas. However, imposing separate national requirements on foreign-flagged ships that use U.S. ports raises sensitive concerns relating to international trade and policy. Consequently, we will recommend that the United States urge the International Maritime Organization to consider and adopt more stringent NO_X limits as well as PM limits for marine diesel engines. Technologies currently under development for very large marine engines hold a lot of promise for reducing their emissions in the future. The emission standards finalized in this final rule for engines capable of burning heavy fuels (15 L/cyl and larger) also suggest that emission improvements can be obtained from slow- and medium-speed engines. Finally, the standards in this final rule for smaller marine diesel engines will provide a good starting point for a new tier of international standards for those engines.

VII. Projected Impacts

A. Environmental Impacts

Chapter 5 of the Final Regulatory Impact Analysis provides a detailed explanation of the methodology we used to determine the environmental benefits from marine diesel engines associated with this final rule. The following discussion gives a general overview of the methodology and the results.

1. Category 1 Engines

For the purposes of the inventory analysis, Category 1 commercial engines were divided into commercial propulsion and auxiliary categories. Annual emissions were then calculated using engine populations, load factors, annual hours of use, rated power, emission factors, turnover, and growth rates. The sources for and the values of these factors are provided in the Final RIA. Note that we received some indication that the annual use for recreational engines may be lower than assumed in the inventory analysis and calculations (Table 5–2 of the Final Regulatory Impact Analysis).

Table 6 presents the projected emissions inventory from Category 1 commercial propulsion and auxiliary marine engines with and without the new emission standards. Table 6 also presents the anticipated effects of the MARPOL Annex VI standards on the Category 1 NO_X inventory. The CO standard places a cap on existing emission levels, so no benefits are claimed here.

TABLE 6.—CATEGORY 1 COMMERCIAL PROPULSION AND AUXILIARY EMISSIONS INVENTORY (THOUSAND SHORT TONS PER YEAR)

Year	HC		NO_X			PM		CO
	Base	Control	Base	MARPOL Annex VI	Control	Base	Control	Base
2000	11.3	11.3	436	434	434	14.0	14.0	69
2005	11.9	11.5	457	449	435	14.7	14.7	72
2010	12.5	11.1	479	465	406	15.4	12.9	76
2020	13.7	10.4	527	506	368	17.0	11.1	83
2030	15.1	11.2	580	556	392	18.7	11.7	91

2. Category 2 Engines

We developed baseline emission inventories for Category 2 marine engines under contract with Carnegie Mellon University.[10] For the purposes of this analysis, emissions are included from all Category 2 engines operated in the Great Lakes, inland waterways, and coastal waters up to 320 kilometers (200 miles) offshore. Emissions from U.S.-flagged vessels were determined using ship registry data, fuel consumption, rated power, operation assumptions, and fuel specific emission factors. Emissions from foreign-flagged vessels were developed based on cargo movements and waterways data, vessel speeds, average dead weight tonnage per ship, and assumed cargo capacity factors.

To model the benefits of the new standards, we applied an engine replacement schedule and new engine standards to the baseline inventory. In this case, no emission reductions are expected beyond the already low levels of HC. Also, the PM and CO standards are intended as caps, and no benefits are claimed for those pollutants. Table 7 shows the projected emissions for

[10] Corbett, J., Fischbeck, P., ''Commercial Marine Emissions Inventory and Analysis for United States Continental and Inland Waterways,'' Carnegie Mellon University, Order No. 8A–0516–NATX, September 1998 (Docket A–97–50; document II–A–01).

Category 2 vessels with and without the new emission standards. The anticipated NO_X impacts for the application of MARPOL Annex VI standards to U.S.-flagged vessels are also included. The analysis presumes no control of emissions beyond MARPOL levels for foreign-flagged vessels; these are included in the analysis because they operate in U.S. waters.

TABLE 7.—CATEGORY 2 EMISSIONS INVENTORY (THOUSAND SHORT TONS PER YEAR)

Year	HC	NO_X			PM	CO
	Base	Base	MARPOL Annex VI	Control	Base	Base
2000	11.1	267	265	265	6.1	34.1
2010	12.3	295	278	266	6.8	37.7
2020	13.6	325	292	250	7.5	41.7
2030	15.0	360	315	243	8.3	46.0

3. Total Impacts

Table 9 contains the baseline annual emissions from marine diesel engines at or above 37 kW as a whole as well as projections of the annual emissions with the MARPOL Annex VI requirements and EPA standards in place. According to this analysis, the emission standards in this final rule will result in reductions, beyond the MARPOL Annex VI limits, of 8 percent HC, 15 percent NO_X, and 11 percent PM percent CO from marine diesel engines in 2020. Nationally, these reductions represents reductions of 0.9 percent NO_X and 0.1 percent PM. The percent reduction would clearly be much higher for port areas. This is especially true for San Diego, Beaumont-Port Arthur, San Francisco and similar ports where marine diesel engines account for a large fraction of the NO_X emissions.[11]

TABLE 9.—EMISSION REDUCTIONS FROM ENGINES SUBJECT TO TIER 2 STANDARDS

		2000	2010	2020	2030
HC (10^3 short tons)	Baseline	22.4	24.7	27.3	30.1
	Controlled	22.4	23.3	24.0	26.2
	Reduction	0%	6%	12%	13%
NO_X (10^3 short tons)	Baseline	702.2	773.5	852.2	939.0
	MARPOL	699.6	742.3	797.5	871.1
	Controlled	699.6	672.1	618.0	634.7
	Reduction*	0%	13%	27%	32%
PM 10^3 short tons	Baseline	20.1	22.2	24.4	27.0
	Controlled	201.1	19.7	18.6	20.0
	Reduction	0%	11%	24%	26%

*This reduction is from the baseline. The Tier 2 standards are expected to achieve a 23 percent reduction in 2020 from the levels expected from the MARPOL standards.

In addition to the effect of the new standards on direct PM emissions noted above, the standards are expected to reduce the concentrations of secondary PM. Secondary PM is formed when NO_X reacts with ammonia in the atmosphere to yield ammonium nitrate particulate. As described in Chapter 5 of the Final RIA, each 100 tons of NO_X reduction results in about a 4-ton reduction in secondary PM. This conversion rate varies from region to region, and is greatest in the West. We estimate that the 257,000 tons per year total NO_X reduction projected for marine engines in 2020 will simultaneously reduce secondary PM by about 10,300 tons. This secondary PM reduction is almost double the direct PM reductions for 2020 projected for this rulemaking.

B. Noise, Energy, and Safety

Engines designed to meet the new emission standards will generally operate at lower noise levels. One important source of noise in diesel combustion is the sound associated with the combustion event itself. When a premixed charge of fuel and air ignites, the very rapid combustion leads to a sharp increase in pressure, which is easily heard and recognized as the characteristic sound of a diesel engine. The conditions that lead to high noise levels also cause high levels of NO_X formation. Fuel injection changes and other NO_X control strategies therefore typically reduce engine noise, sometimes dramatically.

We do not anticipate any negative impacts on energy or safety as a result of this final rule. The impact of the new standards on energy is measured by the effect on fuel consumption from complying engines. Although it is not expected to be a primary compliance strategy, marine engine manufacturers could retard engine timing to comply with emission limits. This could lead to an increase in fuel consumption in the absence of other changes to the engines. Most of the technology changes anticipated in response to the new standards, however, have the potential to reduce fuel consumption as well as emissions. Therefore, on balance, no increase in energy consumption is expected. As far as safety is concerned, we believe that marine engine manufacturers will use only proven technology that is currently used in

[11] Marine diesel engines make up about approximately 17% of the NO_X on a summer day for San Diego, 15% for Beaumont-Port Arthur, and 12% for San Francisco. See the final report ''Commercial Marine Vessel Contributions to Emission Inventories,'' submitted by Booz-Allen & Hamilton, Inc., October 7, 1991 (Docket A–97–50; document II–A–5).

other engines such as nonroad land-based diesel applications, locomotives, and diesel trucks.

C. Economic Impacts

In assessing the economic impact of setting emission standards, we have made a best estimate of the combination of technologies that an engine manufacturer will most likely use to meet the new standards. The analysis presents estimated cost increases for new engines and equipment. This economic impact is comprised of variable costs (for hardware and assembly time) and fixed costs (for research and development, retooling, and certification). The analysis considers total operating costs, including maintenance and fuel consumption, as well. Cost estimates based on these projected technology packages represent an expected change in the cost of engines as they begin to comply with new emission standards. Separate projected costs were derived for engines used in five different ranges of rated power; costs were developed for engines near the middle of the listed ranges. All costs are presented in 1997 dollars. Full details of our cost analysis can be found in Chapter 4 of the Final RIA.

Table 10 summarizes the projected costs of these technologies for meeting the new emission limits. Anticipated incremental cost impacts of the Tier 2 emission limits for the first years of production range from $1,800 to $54,000 per engine, in general with proportionally higher projected costs for larger engines. Long-term impacts on engine costs are expected to be much lower, dropping to levels between $500 and $13,000. Most of this cost reduction is accounted for by the fact that development time and other fixed costs dominate the cost analysis, but disappear after the projected five-year amortization period.

The cost analysis also includes an estimated burden resulting from the need to do additional maintenance work during periodic rebuilds. Complying engines will be equipped with technologies that will require replacement of hardware that is either more expensive than from earlier models, or that is only used because of emission standards. Using typical rebuild schedules, the analysis projects incremental costs for multiple rebuilds, resulting in net-present-value costs that range from $400 to $12,000. In addition to rebuild cost impacts, Table 10 includes an estimated cost burden for conducting production line testing of 1 percent of total industry-wide production.

TABLE 10.—PROJECTED COST IMPACTS BY POWER RATING (kW)

Power rating (kW)	Short-term cost impact	Long-term cost impact	Increased operating cost (npv)
37–225	$1,798	$486	$442
225–560	3,191	846	704
560–1000	25,147	856	206
1000–2000	22,575	1,120	636
2000+	53,923	13,019	12,430

The above analysis presents unit cost estimates for each power category. With current data for engine and vessel sales for each category and projections for the future, these costs can be translated into projected direct costs to the nation for the new emission standards in any year. Aggregate costs are estimated at about $10 million in the first year the new standards apply, increasing to a peak of about $16 million in 2008 as increasing numbers of engines become subject to the new standards. The following years show a drop in aggregate costs as the per-unit cost of compliance decreases, resulting in aggregate costs of $2 million to $3 million after 2010.

Some of the anticipated emission-control technologies improve fuel efficiency, while others may have a negative effect. We believe that, on average, manufacturers will be able to comply with the emission standards without increasing fuel consumption relative to today's models. This will be less true for engine models that have already incorporated advanced technologies. These engines, however, will not need to make the extensive hardware changes projected in our analysis, so they should have a much smaller increase in production costs. Similarly, manufacturers may choose to avoid the high R&D costs of implementing a new technology for an engine family with low sales volume by relying on timing retard as a lower-cost alternative. To show how this compares, we conducted a sensitivity analysis to show the costs associated with a fuel penalty resulting from relying on retarded timing. The Final RIA quantifies the cost of a timing retard strategy, which results in an estimated net-present-value cost increase from fuel consumption ranging from $400 for a 100 kW engine to $19,000 for a 3000 kW engine. This cost results from increased fuel consumption. Considering the established effectiveness of timing retard as a strategy to control NO_X emissions, this may be a viable approach, as either a substitute or a supplemental technology.

D. Cost-effectiveness

We estimated the cost-effectiveness (i.e., the cost per ton of emission reduction) of the new emission standards for the same nominal power ratings of marine engines and vessels highlighted earlier in this section. This analysis has been performed only for Category 1 and Category 2 marine engines, since the final rule does not apply to Category 3 engines. Chapter 6 of the Final RIA contains a more detailed discussion of the cost-effectiveness analysis.

As described in the Final RIA, neither costs nor emission benefits were specifically attributed to the not-to-exceed provisions. The calculated cost-effectiveness of the emission standards presented here therefore includes all the anticipated effects on costs and emission reductions.

1. Tier 2 Cost-Effectiveness

For determining the cost-effectiveness of the Tier 2 emission standards, only benefits beyond those achieved by the MARPOL Annex VI standard were considered. This is a conservative estimate because we attributed all the costs of the technology associated with the Tier 2 levels to this action and did not attribute any of these costs to the MARPOL Annex VI standard. For the sake of this analysis, we assigned the whole cost increase to reducing $HC+NO_X$ emissions. NO_X reductions represent approximately 98 percent of the total $HC+NO_X$ emission reductions expected from the new standards. Table

11 presents the cost-effectiveness of the Tier 2 standards.

TABLE 11.—COST-EFFECTIVENESS OF THE MARINE TIER 2 STANDARDS FOR HC AND NO_X

Nominal power(kW)	NPV of total lifetime costs	NPV benefits (short tons)	Discounted cost-effectiveness	Cost-effectiveness without non-emission benefit.
100	$2,239	4.3	$470	$521
400	3,894	26	137	151
750	25,354	80	318	319
1500	23,210	267	87	88
3000	66,353	750	81	89

Weighting the projected cost and emission benefit numbers presented above by the populations of the individual power categories, we calculated the cost-effectiveness of the Tier 2 HC+NO_X standards for Category 1 and 2, both separately and combined. Table 12 contains the resulting aggregate cost-effectiveness results for the Tier 2 standards.

TABLE 12.—AGGREGATE COST-EFFECTIVENESS FOR THE MARINE TIER 2 STANDARDS FOR HC AND NO_X

	NPV of total lifetime costs	NPV Benefits (short tons)	Discounted Cost-Effectiveness	Cost-Effectiveness without non-emission benefits
Category 1	$4,333	24	$131	$185
Category 2	66,353	750	64	89
Combined	5,667	39	103	172

While the cost estimates described under the Economic Impacts do not take into account the observed value of performance improvements in the field, these non-emission benefits should be taken into account in the calculation of cost-effectiveness. We believe that an equal weighting of emission and non-emission benefits is justified for those technologies which clearly have substantial non-emission benefits, namely fuel injection changes and turbocharging. For some or all of these technologies, a greater value for the non-emission benefits could likely be justified. This has the effect of halving the cost for those technologies in the cost-effectiveness calculation. The cost-effectiveness values in this document are based on this calculation methodology. Cost-effectiveness values are shown without adjustment for non-emission benefits in Tables 11 and 12 for comparison purposes.

2. Comparison to Other Programs

In an effort to evaluate the cost-effectiveness of the HC+NO_X controls for marine engines, we have summarized the cost-effectiveness results for five other recent EPA mobile source rulemakings that required reductions in NO_X (or NMHC+NO_X) emissions. The heavy-duty vehicle portion of the Clean Fuel Fleet Vehicle Program yielded a cost-effectiveness of approximately $1,500 per ton of NO_X. The most recent NMHC+NO_X standards for highway heavy-duty diesel engines yielded a cost-effectiveness of $100-$600 per ton of NMHC+NO_X. The newly adopted standards for locomotive engines yielded a cost-effectiveness of $160–$250 per ton of NO_X. Finally, the recent standards for nonroad engines reported a cost-effectiveness of $410–$600 per ton. The cost-effectiveness of the new HC+NO_X standards for marine diesel engines presented above is more favorable than the cost-effectiveness of many other recent programs.

We have also summarized the cost-effectiveness results for three other recent EPA mobile source rulemakings that required reductions in PM emissions. The cost-effectiveness of the most recent urban bus engine PM standard was estimated to be $10,000–$16,000 per ton, and the cost-effectiveness of the urban bus retrofit/rebuild program was estimated to be approximately $25,000 per ton. The October 1998 nonroad diesel final rule reported a cost-effectiveness for PM of $2,300 per ton (using the same conservative method used here for marine engines). The cost-effectiveness of the PM emission standard for marine diesel engines presented above is more favorable than that of either of the urban bus programs and is comparable to that of the nonroad rule.

We also analyzed the PM cost-effectiveness of the new standards by attributing half of the increased costs to controlling PM to compare with other PM control strategies. This approach effectively double-counts these costs, since we already assess the full cost of the program in the calculation of NO_X+HC cost-effectiveness. This aggregate discounted lifetime cost-effectiveness represents the highest figure that could be expected for cost-effectiveness of the new standards and was calculated to provide an indication of the upper bound of PM cost-effectiveness values. The resulting fleet-wide discounted lifetime cost-effectiveness of the PM standards is approximately $600–$2,600 per ton. This cost-effectiveness is much better than for the urban bus PM standard and the urban bus retrofit/rebuild program and is comparable to the nonroad Tier 2 standards.

In addition to the benefits of reducing ozone within and transported into urban ozone nonattainment areas, the NO_X reductions from the new standards are expected to have beneficial impacts with respect to crop damage, secondary particulate formation, acid deposition, eutrophication, visibility, and the viability of forests, as described earlier.

Because it is difficult to quantify the monetary value of these societal benefits, the cost-effectiveness values presented do not assign any numerical value to them.

VIII. Direct Final Changes

In the proposal for this rulemaking, we did not include modifications to the PLT regulations for locomotives in 40 CFR Part 92. However, on May 13, 1999, EMA submitted a comment to the public docket stating that they believe it is important to make the PLT provisions consistent between locomotives and Category 2 marine engines. We agree with this comment. This requires two revisions to the locomotive regulations. The first revision is the addition of a regulatory provision that authorizes the Administrator to conduct alternate PLT programs instead of the program specified in the regulations. The locomotive FRM preamble stated that we were finalizing such a provision, but the regulatory text was not included in the notice. Thus, we believe there is good cause to finalize this provision without providing the public additional opportunity to comment on it.

The second issue is related to a technical detail of the locomotive PLT program. The previously finalized regulations require that engines tested for PLT have service accumulation ''equivalent to 300 hours of operation.'' EMA commented that we should require only that they have service accumulation ''up to 300 hours of operation,'' which is the same as we proposed for marine engines in this rulemaking. Given the technical nature of this issue, we believe that it would be appropriate to finalize this revision, without providing the public an opportunity to comment on them.

In addition, we are revising the definition of new in 40 CFR 89.2. The existing definition inadvertantly omits a portion of the intended definition. The revised definition is consistent with our other control programs.

The revisions to 40 CFR parts 89 and 92 will be effective February 28, 2000, provided that we do not receive notification on or before January 28, 2000 that someone wishes to file an adverse or negative comment regarding this issue. If we do not receive such comment, this provision will become final and effective without further EPA action. If on the other hand, we do receive notification on or before January 28, 2000 that someone wishes to file an adverse or negative comment regarding this issue, we will withdraw this revision, then propose it and go through full notice-and-comment procedures before finalizing the revision again.

IX. Public Participation

A wide variety of interested parties participated in the rulemaking process that culminates with this final rule. This process provided several opportunities for public comment over a period of several years. We first proposed emission standards for marine diesel engines on November 9, 1994 (59 FR 55929), with a supplemental proposal on February 7, 1996 (61 FR 4600). An Advance Notice of Proposed Rulemaking published May 22, 1998 announced our plan to pursue a new direction in regulating marine diesel engines (63 FR 28309). Comments received on that notice were considered in the development of the proposal (December 11, 1998, 63 FR 68508). The comment period and public hearing associated with that proposal provided another opportunity for public input. We have also met with a variety of stakeholders at various points in the process, including engine manufacturers, engine marinizers, vessel builders, environmental organizations, and states.

We have described and provided responses to the comments on the proposed rule in the Summary and Analysis of Comments, which is available in the docket for this rulemaking and on the Office of Mobile Sources internet home page. Some of the principal areas of comment are highlighted here. Engine manufacturers and others had extensive comment on the feasibility, appropriate level and timing of the standards. Several commenters focused on the proposed Tier 3 standards and the largest Category 2 engines. The final rule divides Category 2 into new subcategories with differentiated emission standards. Additional comments centered on the timing and level of the Tier 2 standards. We address these comments in Chapter 3 of the Final RIA and in Chapter 3 of the Summary and Analysis of Comments. Manufacturers also expressed several concerns with the proposed not-to-exceed provisions. They questioned the principle of Not-to-Exceed requirements generally and their effect on the stringency of the emission standards. They also raised practical issues related to the conditions and ranges associated with Not-to-Exceed testing. The Summary and Analysis of Comments in Chapter 4 provides responses to these comments and describes the several changes we made to the proposed rule to address these concerns.

Though we are not including recreational engines and vessels in this final rule, we need to define these terms here to differentiate them from commercial models. Engine and vessel manufacturers had objections to our proposed definitions, primarily because of potential inconsistencies with Coast Guard requirements and the potential liability for vessel manufacturers. To address these concerns, we drew directly from the existing Coast Guard definitions, with one necessary change. A manufacturer needs to establish a vessel's classification as commercial or recreational before it is sold or used, so the final definitions specify the intent of the manufacturers to produce vessels for recreational purposes as the determining factor. We describe this further in Section II.E. above and in Chapter 2 of the Summary and Analysis of Comments.

X. Administrative Requirements

A. Administrative Designation and Regulatory Analysis

Under Executive Order 12866, the Agency must determine whether this regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order (58 FR 51735, Oct. 4, 1993). The order defines ''significant regulatory action'' as any regulatory action 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 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.

Pursuant to the terms of Executive Order 12866, EPA has submitted this rulemaking to the Office of Management and Budget for review and prepared a Final RIA, which is available in the docket. Any written comments from OMB and any EPA response to OMB comments are also in the public docket. EPA estimates total societal costs resulting from this final rule between $15 million and $20 million for the early years, with a decreasing annual figure once manufacturers fully amortize their fixed costs.

B. Regulatory Flexibility

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment requirements, unless the Agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. For the reasons set out below, this rulemaking will not have a significant impact on a substantial number of small entities.

EPA has identified four types of entities that may be affected by the final rule: base engine manufacturers, post-manufacture marinizers, commercial vessel builders, and boat operators.

The group of companies that marinize their own base engines presents no small business impacts concerns because all of the manufacturers are large (using the Small Business Administration definitions).

Numerous manufacturers of commercial vessels and commercial boats qualify as small businesses. [12] This final rule, however, is expected to impose very little additional cost on these entities. According to discussions with several of these vessel and boat builders and a related trade association, the production of new commercial vessels is generally flexible enough to accommodate physical changes to an engine without forcing a redesign of the vessel.

The small entities likely to be affected by the final rule are post-manufacture marinizers. These companies modify a land-based engine for use in the marine environment. The following discussion of the impacts on these companies is derived from an impact assessment prepared for this rulemaking by ICF, Inc. and discussions with several potentially affected companies. [13]

Through conversations with engine manufacturers and vessel builders, EPA initially identified twelve small post-manufacture marinizers. Four of these were subsequently eliminated from the Agency's analysis (two were eliminated because there were subsidiary companies of other companies on the list; two others were eliminated because they do not actually manufacture marine engines). The eight remaining companies were used to develop a model small company for purposes of exploring the impact of this rulemaking. Using this model small company as a guide, it was estimated that average compliance costs will range from 1.3 percent to 3.9 percent (relative to total revenues), depending on the compliance cost scenario used. [14] As discussed above, this final rule contains many provisions to ease the burden of compliance for small post-manufacture marinizers.

Because the number of companies examined is so small, EPA also performed an analysis using company-specific data instead of the model company. According to this data, in the least costly compliance scenario, four small post-manufacture marinizers may be affected by more than 3 percent of sales, two companies by 1 to 3 percent of sales, and two companies by less than 1 percent of sales. Of the four companies originally thought to be affected by more than 3 percent of sales, two were eliminated because they, in fact, only dress engines. The original estimate of 3 percent is therefore an overstatement of costs for these companies. As discussed above, a company dressing engines needs to label the engines, but does not need to demonstrate compliance with emission standards. Under the expanded definition of engine dressing in the final rule, one additional company would be exempt from certification requirements for most of its engines, which undergo an exchange of turbochargers. Consequently, it is expected that only one small company may be affected by more than 3 percent of annual sales. It may, however, be possible for all marinizers subject to certification requirements to reduce the impacts of this rule further. For example, they can marinize a cleaner engine, thus reducing the design and development costs associated with bringing a previous tier engine to the new emission standards. Alternatively, they may be able to work more closely with the base engine manufacturer to reduce the need for extensive redesign of their marinization process.

C. Paperwork Reduction Act

The information collection requirements in this final rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request has been prepared by EPA, and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460 or by calling (202) 260–2740.

The information being collected is to be used by EPA to ensure that new marine diesel engines comply with applicable emissions standards through certification requirements and various subsequent compliance provisions.

The annual public reporting and recordkeeping burden for this collection of information is estimated to average 589 hours per response, with collection required annually. The estimated number of respondents is 32. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, 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; adjusting the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are displayed in 40 CFR Part 9 and 48 CFR Chapter 15.

In compliance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), this document announces that the Information Collection Request for this rulemaking has been forwarded to the Office of Management and Budget (OMB) for review and approval. The Information Collection Request describes the nature of the information collection and its expected burden and cost. Sections 94.203, 94.206, 94.213, 94.215, 94.308, 94.309, 94.403, 94.404, 94.406, 94.508, 94.509, 94.803, 94.1104, 94.1108 do not apply until the Office of

[12] Commercial vessels are larger merchant vessels, typically exceeding 400 feet in length and generally used in waterborne trade and/or passenger transport. Commercial boats are smaller service, industrial, and fishing vessels generally used in inland and coastal waters. A more indepth description of these industry sectors is contained in ''Industry Characterization: Commercial Marine Vessel Manufacturers'' prepared by ICF, Inc. for US Environmental Protection Agency, Contract No. 68–C5–0010, September 1998 (Docket A–97–50, document II–A–3).

[13] ''Characterization and Small Business Impact Assessment for Small and Large Marine Compression Ignition Engine Manufacturers/Marinizers,'' prepared by ICF Incorporated for U.S. Environmental Protection Agency, Contract Number 68–C5–0010, September 1998 (Docket A–97–50; document II-A–4).

[14] ICF explored three cost scenarios: $100,000, $200,000, and $300,000 per engine family.

Management and Budget has approved the information collection requirements contained in them. We will publish a document in the **Federal Register** announcing the information collection requirements are approved.

D. Unfunded Mandates Reform Act

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, 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 one 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 of 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.

EPA has determined that this rule does not contain a federal mandate that may result in expenditures of $100 million or more for state, local, and tribal governments, in the aggregate, or the private sector in any one year. The rule does not impose any enforceable duties on state, local, or tribal governments, i.e., they manufacture no engines and are therefore not required to comply with the requirements of this rule. For the same reason, EPA has determined that this rule also contains no regulatory requirements that might significantly or uniquely affect small governments. EPA projects that annual economic effects will be far less than $100 million. Thus, this final rule is not subject to the requirements of sections 202 and 205 of the UMRA.

E. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

In specifying the proposed test procedures for marine engines, we sought to maximize consistency with other nonroad programs in 40 CFR Parts 89 and 92. This is because most commercial marine engines in the U.S. are derivations of engines that are regulated under 40 CFR Parts 89 and 92. The test procedures from these EPA programs sections are very similar to those specified in ISO 8178, with a few important differences. First, the ISO procedures correct measured emissions to a narrow set of reference testing conditions to minimize variability in measured emission values. This is in conflict with our goal generally to ensure to control of emissions over the wide range of engine operation and ambient conditions that the engine can reasonably be expected to encounter in use. The narrow set of ISO reference testing conditions is also in conflict with the not-to-exceed emission standards in this final rule, which specifically requires manufacturers to control emissions in a zone of engine operation over defined ranges of test conditions that are wider. Second, the ISO procedures allow wide discretion for manufacturers to set important test parameters such as rated speed and fuel properties. We describe in the Summary and Analysis of Comments why it is important to define an explicit procedure to determine an objective value for an engine's rated speed and to establish a range of test fuel properties (especially sulfur). Third, an ISO committee is in the process of making various corrections to the calculations and sampling and analysis procedures currently specified in 8178. EPA is hopeful that future ISO test procedures will be developed that are usable for the broad range of testing needed, and that such procedures could then be adopted by reference. EPA also expects that any development of revised test procedures will be done in accordance with ISO procedures and in a balanced manner and thus include the opportunity for involvement of a range of interested parties (potentially including parties such as industry, EPA, state governments, and environmental groups) so that the resulting procedures can represent these different interests.

F. Protection of Children

Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), applies to a rule that is determined to be ''economically significant,'' as defined under Executive Order 12866, if the environmental health or safety risk addressed by the rule has a disproportionate effect on children. For these rules, the Agency must evaluate the environmental health or safety effects of the planned rule on children; and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This final rule is not subject to Executive Order 13045, because it does not involve decisions on environmental health or safety risks that may disproportionately affect children. Moreover, this rule is determined not to be economically significant under Executive Order 12866.

G. Executive Order 13132 (Federalism)

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds

necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

If EPA complies by consulting, Executive Order 13132 requires EPA to provide to the Office of Management and Budget (OMB), in a separately identified section of the preamble to the rule, a federalism summary impact statement (FSIS). The FSIS must include a description of the extent of EPA's prior consultation with State and local officials, a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of State and local officials have been met. Also, when EPA transmits a draft final rule with federalism implications to OMB for review pursuant to Executive Order 12866, EPA must include a certification from the agency's Federalism Official stating that EPA has met the requirements of Executive Order 13132 in a meaningful and timely manner.

This final rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This final rule creates no mandate on state, local or tribal governments. The rule imposes no enforceable duties on these entities, because they do not manufacture any engines that are subject to this rule. This rule will be implemented at the federal level and impose compliance obligations only on private industry. Thus, the requirements of section 6 of the Executive Order do not apply to this rule.

H. Consultation and Coordination with Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

This final rule will not significantly or uniquely affect the communities of Indian tribal governments. As noted above, this rule will be implemented at the federal level and impose compliance obligations only on private industry. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

I. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq*., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit 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 United States prior to publication of the rule in the **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804 (2).

XI. Judicial Review

Under section 307(b) of the Act, EPA finds that these regulations are of national applicability. Accordingly, judicial review of this action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit by February 28, 2000. Under section 307 (b)(2) of the Act, the requirements published in this document may not be challenged later in judicial proceedings brought by EPA to enforce these requirements.

List of Subjects

40 CFR Part 89

Environmental protection, Administrative practice and procedure, Confidential business information, Diesel fuel, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Vessels, Warranties.

40 CFR Part 92

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Labeling, Railroads, Reporting and recordkeeping requirements, Warranties.

40 CFR Part 94

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Diesel fuel, Imports, Incorporation by reference, Penalties, Reporting and recordkeeping requirements, Research, Vessels, Warranties.

Dated: November 23, 1999.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as set forth below.

PART 89—[AMENDED]

1. The authority citation for Part 89 is revised to read as follows:

Authority: 42 U.S.C. 7521, 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7545, 7547, 7549, 7550, and 7601(a).

Subpart A—[Amended]

2. Section 89.1 is revised to read as follows:

§ 89.1 Applicability.

(a) This part applies for all compression-ignition nonroad engines (see definition of ''nonroad engine'' in § 89.2) except those specified in paragraph (b) of this section. This means that the engines for which this part applies include but are not limited to the following:

(1) Compression-ignition engines exempted from the requirements of 40 CFR Part 92 by 40 CFR 92.907;

(2) Compression-ignition engines exempted from the requirements of 40 CFR Part 94 by 40 CFR 94.907;

(3) Portable compression-ignition engines that are used in but not installed in marine vessels (as defined in the General Provisions of the United States Code, 1 U.S.C. 3);

(4) Non-propulsion compression-ignition engines used in locomotives; and

(5) Compression-ignition marine engines with rated power under 37 kW.

(b) (1) *Aircraft engines.* This part does not apply for engines used in aircraft (as defined in 40 CFR 87.1).

(2) *Mining engines.* This part does not apply for engines used in underground mining of engines used in underground mining equipment and regulated by the Mining Safety and Health Administration (MSHA) in 30 CFR Parts 7, 31, 32, 36, 56, 57, 70, and 75.

(3) *Locomotive engines.* This part does not apply for engines that:

(i) Are subject to the standards of 40 CFR part 92; or

(ii) Are exempted from the requirements of 40 CFR part 92 by exemption provisions of 40 CFR part 92 other than those specified in 40 CFR 92.907.

(4) *Marine engines.* This part does not apply for engines that:

(i) Are subject to the standards of 40 CFR part 94;

(ii) Are exempted from the requirements of 40 CFR part 94 by exemption provisions of 40 CFR part 94 other than those specified in 40 CFR 94.907; or

(iii) Are marine engines (as defined in 40 CFR part 94) with rated power at or above 37kW that are manufactured in calendar years in which the standards of 40 CFR part 94 are not yet applicable.

(5) *Hobby engines.* This part does not apply for engines with a per-cylinder displacement of less than 50 cubic centimeters.

3. Section 89.2 is amended by revising the definition of ''New'' to read as follows:

§ 89.2 Definitions.

* * * * *

New for purposes of this part, means a nonroad engine, nonroad vehicle, or nonroad equipment the equitable or legal title to which has never been transferred to an ultimate purchaser. Where the equitable or legal title to the engine, vehicle, or equipment is not transferred to an ultimate purchaser until after the engine, vehicle, or equipment is placed into service, then the engine, vehicle, or equipment will no longer be new after it is placed into service. A nonroad engine, vehicle, or equipment is placed into service when it is used for its functional purposes. With respect to imported nonroad engines, nonroad vehicles, or nonroad equipment, the term *new* means an engine, vehicle, or piece of equipment that is not covered by a certificate of conformity issued under this part at the time of importation, and that is manufactured after the effective date of a regulation issued under this part which is applicable to such engine, vehicle, or equipment (or which would be applicable to such engine, vehicle, or equipment had it been manufactured for importation into the United States).

* * * * *

PART 92—[AMENDED]

4. The authority citation for Part 92 continues to read as follows:

Authority: 42 U.S.C. 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7545, 7547, 7549, 7550 and 7601(a).

Subpart F—[Amended]

5. Section 92.503 is amended by adding paragraph (c) to read as follows:

§ 92.503 General Requirements.

* * * * *

(c) Upon request, the Administrator may also allow manufacturers (and remanufacturers, where applicable) to conduct alternate production line testing programs, provided the Administrator determines that the alternate production line testing program provides equivalent assurance that the locomotives and locomotive engines that are being produced conform to the provisions of this part. As part of this allowance or for other reasons, the Administrator may waive some or all of the requirements of this subpart.

6. Section 92.506 is amended by revising paragraph (c) to read as follows:

§ 92.506 Test procedures.

* * * * *

(c) *Service Accumulation/Green Engine factor.* The manufacturer or remanufacturer shall accumulate service on the locomotives and locomotive engines to be tested up to 300 hours of operation. In lieu of conducting such service accumulation, the manufacturer or remanufacturer may establish a Green Engine factor for each regulated pollutant for each engine family to be used in calculating emissions test results. The manufacturer or remanufacturer shall obtain the approval of the Administrator prior to using a Green Engine factor.

* * * * *

7. Part 94 is added to read as follows:

PART 94—CONTROL OF AIR POLLUTION FROM MARINE COMPRESSION-IGNITION ENGINES

Subpart A—General Provisions for Emission Regulations for Compression-Ignition Marine Engines

Subpart B—Test Procedures

Subpart C—Certification Provisions

Subpart D—Certification Averaging, Banking, and Trading Provisions

Authority: 42 U.S.C. 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7545, 7547, 7549, 7550 and 7601(a).

Subpart A—General Provisions for Emission Regulations for Compression-Ignition Marine Engines

§ 94.1 Applicability.

(a) Except as noted in paragraphs (b) and (c) of this section, the provisions of this part apply to manufacturers (including post-manufacture marinizers and dressers), rebuilders, owners and operators of:

(1) Marine engines that are compression-ignition engines manufactured (or that otherwise become new) on or after January 1, 2004;

(2) Marine vessels manufactured (or that otherwise become new) on or after January 1, 2004 and which include a compression-ignition marine engine.

(b) Notwithstanding the provision of paragraph (c) of this section, the requirements and prohibitions of this part do not apply with respect to the engines identified in paragraphs (a)(1) and (2) of this section where such engines are:

(1) Category 3 marine engines;

(2) Marine engines with rated power below 37 kW; or

(3) Marine engines on foreign vessels.

(c) The provisions of subpart L of this part apply to all persons with respect to the engines identified in paragraphs (a)(1) and (2) of this section.

(d) The provisions of this part do not apply to any persons with respect to the engines not identified in paragraphs (a)(1) and (2) of this section.

(e) The prohibition specified in § 94.1103(a)(6) applies to all persons with respect to recreational marine engines. Notwithstanding the provision of paragraph (c) of this section, requirements or prohibitions other than the prohibition specified in § 94.1103(a)(6) do not apply with respect to recreational marine engines.

§ 94.2 Definitions.

(a) The definitions of this section apply to this subpart. They also apply to all subparts of this part, except where noted otherwise.

(b) As used in this part, all terms not defined in this section shall have the meaning given them in the Act: *Act* means the Clean Air Act as amended (42 U.S.C. 7401 *et seq.*).

Adjustable Parameter means any device, system, or element of design which is physically or electronically capable of being adjusted (including those which are difficult to access) and which, if adjusted, may affect emissions or engine performance during emission testing.

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

Aftertreatment system or *aftertreatment component* or *aftertreatment technology* means any system or component or technology mounted downstream of the exhaust valve or exhaust port whose design function is to reduce exhaust emissions.

Applicable standard means a standard to which an engine is subject; or, where an engine is certified to another standard or FEL, applicable standard means the other standard or FEL to which the engine is certified, as allowed by § 94.8. This definition does not apply to subpart D of this part.

Auxiliary engine means a marine engine that is not a propulsion engine.

Auxiliary emission control device (AECD) means any element of design which senses temperature, vessel speed, engine RPM, atmospheric pressure, manifold pressure or vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system (including, but not limited to injection timing); or any other feature that causes in-use emissions to be higher than those measured under test conditions.

Averaging means the exchange of emission credits among engine families within a given manufacturer's product line.

Banking means the retention of emission credits by a credit holder for use in future calendar year averaging or trading as permitted by the regulations in this part.

Base engine means a land-based engine to be marinized, as configured prior to marinization.

Blue Sky Series engine means an engine meeting the requirements of § 94.7(e).

Calibration means the set of specifications, including tolerances, specific to a particular design, version, or application of a component, or components, or assembly capable of functionally describing its operation over its working range.

Category 1 means relating to a marine engine with a rated power greater than or equal to 37 kilowatts and a specific engine displacement less than 5.0 liters per cylinder.

Category 2 means relating to a marine engine with a specific engine displacement greater than or equal to 5.0 liters per cylinder but less than 30 liters per cylinder.

Category 3 means relating to a marine engine with a specific engine displacement greater than or equal to 30 liters per cylinder.

Commercial marine engine means a marine engine that is not a recreational marine engine.

Compliance date means the date on which compliance with a standard becomes mandatory. For example, the compliance date for standards which first apply to the 2004 model year, is January 1, 2004.

Compression-ignition means relating to a type of engine with operating characteristics significantly similar to the theoretical Diesel combustion cycle. The non-use of a throttle to regulate intake air flow for controlling power during normal operation is indicative of a compression-ignition engine.

Configuration means any subclassification of an engine family which can be described on the basis of gross power, emission control system, governed speed, injector size, engine calibration, and other parameters as designated by the Administrator.

Constant-speed engine means an engine that is governed to operate only at a single rated speed.

Crankcase emissions means airborne substances emitted to the atmosphere from any portion of the engine crankcase ventilation or engine lubrication system.

Defeat device means an AECD or other control feature that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal engine operation and use, unless the AECD or other control feature has been identified by the manufacturer in the application for certification, and:

(1) Such conditions are substantially represented by the portion of the applicable duty cycle of § 94.105 during which the applicable emission rates are measured;

(2) The need for the AECD or other control feature is justified in terms of protecting the engine or vessel against damage or accident; or

(3) The AECD or other control feature does not go beyond the requirements of engine starting.

Designated Officer means the person designated by the Director of the Office of Mobile Sources to act as the Designated Officer under the provisions of this part. For marine engines, the address for the Designated Officer is: Group Manager, Engine Compliance Group, U.S. EPA (mail code 6403J), 401 M Street SW, Washington, DC, 20460.

Deterioration factor means the difference between exhaust emissions at the end of useful life and exhaust emissions at the low hour test point expressed as either: the ratio of exhaust emissions at the end of useful life to exhaust emissions at the low hour test point (for multiplicative deterioration factors); or the difference between exhaust emissions at the end of useful life and exhaust emissions at the low hour test point (for additive deterioration factors).

Diesel fuel means any fuel suitable for use in diesel engines which is commonly or commercially known or sold as diesel fuel.

Dresser means any entity that modifies a land-based engine for use in a marine vessel, in compliance with the provisions of § 94.907. This means that dressers may not modify the engine in a way that would affect emissions.

Emission control system means those devices, systems or elements of design which control or reduce the emission of substances from an engine. This includes, but is not limited to, mechanical and electronic components and controls, and computer software.

Emission credits means the amount of emission reduction or exceedance, by an engine family, below or above the emission standard, respectively, as calculated under subpart D of this part. Emission reductions below the standard are considered as ''positive credits,'' while emission exceedances above the standard are considered as ''negative credits.'' In addition, ''projected credits'' refer to emission credits based on the projected applicable production/sales volume of the engine family. ''Reserved credits'' are emission credits generated within a calendar year waiting to be reported to EPA at the end of the calendar year. ''Actual credits'' refer to emission credits based on actual applicable production/sales volume as contained in the end-of-year reports submitted to EPA.

Emission-data engine means an engine which is tested for purposes of emission certification or production line testing.

Emission-related defect means a defect in design, materials, or workmanship in a device, system, or assembly which affects any parameter or specification enumerated in Appendix I of this part.

Emission-related maintenance means that maintenance which substantially affects emissions or which is likely to affect the deterioration of the engine or vessel with respect to emissions.

Engine family means a group of engine configurations that are expected to have similar emission characteristics throughout the useful lives of the engines (see § 94.204), and that are (or were) covered (or requested to be covered) by a specific certificate of conformity.

Engineering analysis means a summary of scientific and/or engineering principles and facts that support a conclusion made by a manufacturer, with respect to compliance with the provisions of this part.

EPA Enforcement Officer means any officer or employee of the Environmental Protection Agency so designated in writing by the Administrator or his/her designee.

Exhaust emissions means substances (i.e., gases and particles) emitted to the atmosphere from any opening downstream from the exhaust port or exhaust valve of an engine.

Exhaust gas recirculation means an emission control technology that reduces emissions by routing gases that had been exhausted from the combustion chamber(s) back into the engine to be mixed with incoming air prior to or during combustion. The use of valve timing to increase the amount of residual exhaust gas in the combustion chamber(s) that is mixed with incoming air prior to or during combustion is not considered to be exhaust gas recirculation for the purposes of this part.

Family Emission Limit (FEL) means an emission level declared by the certifying manufacturer to serve in lieu of an otherwise applicable emission standard for certification and compliance purposes in the averaging, banking and trading program. FELs are expressed to the same number of decimal places as the applicable emission standard.

Foreign vessel means a vessel of foreign registry or a vessel operated under the authority of a country other than the United States.

Fuel system means the combination of fuel tank(s), fuel pump(s), fuel lines and filters, pressure regulator(s), and fuel injection components, fuel system vents, and any other component involved in the delivery of fuel to the engine.

Green Engine Factor means a factor that is applied to emission

measurements from an engine that has had little or no service accumulation. The Green Engine Factor adjusts emission measurements to be equivalent to emission measurements from an engine that has had approximately 300 hours of use.

Identification number means a specification (for example, model number/serial number combination) which allows a particular engine to be distinguished from other similar engines.

Importer means an entity or person who imports engines from a foreign country into the United States (including its territories).

Intermediate Speed means peak torque speed if peak torque speed occurs from 60 to 75 percent of maximum test speed. If peak torque speed is less than 60 percent of maximum test speed, intermediate speed means 60 percent of maximum test speed. If peak torque speed is greater than 75 percent of maximum test speed, intermediate speed means 75 percent of maximum test speed.

Low hour engine means an engine during the interval between the time that normal assembly operations and adjustments are completed and the time that 300 additional operating hours have been accumulated (including hours of operation accumulated during emission testing, if performed).

Malfunction means a condition in which the operation of a component in an engine occurs in a manner other than that specified by the certifying manufacturer (e.g., as specified in the application for certification); or the operation of an engine in that condition.

Manufacturer means any person engaged in the manufacturing or assembling of new engines or importing such engines for resale, or who acts for and is under the control of any such person in connection with the distribution of such engines. The term manufacturer includes post-manufacturer marinizers, but does not include any dealer with respect to new engines received by such person in commerce.

Manufacturer-owned engine means an uncertified marine engine that is owned and controlled by a manufacturer, is used for product development, and is not sold or leased.

Marine engine means an engine that is installed or intended to be installed on a marine vessel. This definition does not include portable auxiliary engines for which the fueling, cooling and exhaust systems are not integral parts of the vessel.

Marine vessel has the meaning specified in the General Provisions of the United States Code, 1 U.S.C. 3.

Maximum Test Power means:

(1) For Category 1 engines, the power output observed at the maximum test speed with the maximum fueling rate possible.

(2) For Category 2 engines, 90 percent of the power output observed at the maximum test speed with the maximum fueling rate possible.

Maximum Test Torque means the torque output observed at the test speed with the maximum fueling rate possible at that speed.

Method of aspiration means the method whereby air for fuel combustion enters the engine (e.g., naturally aspirated or turbocharged).

Model year means the manufacturer's annual new model production period which includes January 1 of the calendar year, ends no later than December 31 of the calendar year, and does not begin earlier than January 2 of the previous calendar year. Where a manufacturer has no annual new model production period, model year means calendar year.

New marine engine means:

(1)(i) A marine engine, the equitable or legal title to which has never been transferred to an ultimate purchaser;

(ii) A marine engine installed on a vessel, the equitable or legal title to such vessel has never been transferred to an ultimate purchaser; or

(iii) A marine engine that has not been placed into service on a vessel.

(2) Where the equitable or legal title to an engine or vessel is not transferred to an ultimate purchaser prior to its being placed into service, the engine ceases to be new after it is placed into service.

(3) With respect to imported engines, the term ''new marine engine'' means an engine that is not covered by a certificate of conformity under this part at the time of importation, and that was manufactured after the starting date of the emission standards in this part which are applicable to such engine (or which would be applicable to such engine had it been manufactured for importation into the United States).

New vessel means:

(1)(i) A vessel, the equitable or legal title to which has never been transferred to an ultimate purchaser; or

(ii) A vessel that has been modified such that the value of the modifications exceeds 50 percent of the value of the modified vessel.

(2) Where the equitable or legal title to a vessel is not transferred to an ultimate purchaser prior to its being placed into service, the vessel ceases to be new when it is placed into service.

Nonconforming marine engine means a marine engine which is not covered by a certificate of conformity prior to importation or being offered for importation (or for which such coverage has not been adequately demonstrated to EPA); or a marine engine which was originally covered by a certificate of conformity, but which is not in a certified configuration, or otherwise does not comply with the conditions of that certificate of conformity.

Note: This definition does not include domestic marine engines which are not covered by a certificate of conformity prior to their introduction into U.S. commerce; such engines are considered to be ''noncomplying marine engines.''

Oxides of nitrogen means nitric oxide and nitrogen dioxide. Oxides of nitrogen are expressed quantitatively as if the nitric oxide were in the form of nitrogen dioxide (oxides of nitrogen are assumed to have a molecular weight equivalent to nitrogen dioxide).

Passenger has the meaning given by 46 U.S.C. 2101(21). This generally means that a passenger is a person that pays to be on the vessel.

Post-manufacture marinizer means an entity that produces a marine engine by modifying a non-marine engine, whether certified or uncertified, complete or partially complete, where such entity is not controlled by the manufacturer of the base engine or by an entity that also controls the manufacturer of the base engine. In addition, vessel manufacturers that substantially modify marine engines are post-manufacture marinizers. For the purpose of this definition, ''substantially modify'' means changing an engine in a way that could change engine emission characteristics.

Presentation of credentials means the display of the document designating a person as an EPA enforcement officer.

Primary fuel means that type of fuel (e.g., petroleum distillate diesel fuel) that is expected to be consumed in the greatest quantity (volume basis) when the engine is operated in use.

Propulsion engine means an engine that moves a vessel through the water or directs the movement of a vessel.

Recreational marine engine means a propulsion marine engine that is intended by the manufacturer to be installed on a recreational vessel, and which is permanently labeled as follows: ''THIS ENGINE IS CATEGORIZED AS A RECREATIONAL ENGINE UNDER 40 CFR PART 94, AND IS NOT SUBJECT TO THE EMISSION STANDARDS OF THAT PART. INSTALLATION OF THIS ENGINE IN ANY NONRECREATIONAL VESSEL IS

A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY.''

Recreational vessel means a vessel that is intended by the vessel manufacturer to be operated primarily for pleasure or leased, rented or chartered to another for the latter's pleasure. For this definition, the term ''operated primarily for pleasure or leased, rented or chartered to another for the latter's pleasure'' does not include the following vessels:

(1) Vessels of less than 100 gross tons that carry more than 6 passengers (as defined in this section).

(2) Vessels of 100 gross tons or more that carry one or more passengers (as defined in this section).

(3) Vessels used solely for competition.

Service life means the total life of an engine. Service life begins when the engine is originally manufactured and continues until the engine is permanently removed from service.

Specific emissions means emissions expressed on the basis of observed brake power, using units of g/kW-hr. Observed brake power measurement includes accessories on the engine if these accessories are required for running an emission test (except for the cooling fan). When it is not possible to test the engine in the gross conditions, for example if the engine and transmission form a single integral unit, the engine may be tested in the net condition. Power corrections from net to gross conditions will be allowed with prior approval of the Administrator.

Specified by a certificate of conformity or *specified in a certificate of conformity* means stated or otherwise specified in a certificate of conformity or an approved application for certification.

Test engine means an engine in a test sample.

Test sample means the collection of engines or vessels selected from the population of an engine family for emission testing.

Tier 2 means relating to an engine subject to the Tier 2 emission standards listed in § 94.8.

Total Hydrocarbon Equivalent means the sum of the carbon mass contributions of non-oxygenated hydrocarbons, alcohols and aldehydes, or other organic compounds that are measured separately as contained in a gas sample, expressed as petroleum-fueled engine hydrocarbons. The hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1.

Trading means the exchange of engine emission credits between credit holders.

Ultimate Purchaser means, with respect to any new engine or vessel, the first person who in good faith purchases such new engine or vessel for purposes other than resale.

United States. United States includes the customs territory of the United States as defined in 19 U.S.C. 1202, and the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

U.S.-directed production volume means the number of marine engine units, subject to this part, produced by a manufacturer for which the manufacturer has reasonable assurance that sale was or will be made to ultimate purchasers in the United States.

Useful life means the period during which an engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as hours of operation and years. It is the period during which a new engine is required to comply with all applicable emission standards. (Note: § 94.9(a) specifies minimum requirements for useful life values.)

Vessel means a marine vessel.

Voluntary emission recall means a repair, adjustment, or modification program voluntarily initiated and conducted by a manufacturer to remedy any emission-related defect for which notification of engine or vessel owners has been provided.

§ 94.3 Abbreviations.

The abbreviations of this section apply to all subparts of this part and have the following meanings:

AECD—Auxiliary emission control device.
API—American Petroleum Institute.
ASTM—American Society for Testing and Materials.
°C—Degrees Celsius.
CI—Compression ignition.
CO—Carbon monoxide.
CO_2—Carbon dioxide.
disp.—volumetric displacement of an engine cylinder.
EGR—Exhaust gas recirculation.
EP—End point.
EPA—Environmental Protection Agency.
FEL—Family emission limit.
ft—foot or feet.
FTP—Federal Test Procedure.
g—gram(s).
g/kW-hr—Grams per kilowatt hour.
gal—U.S. gallon.
h—hour(s).
HC—hydrocarbon.
Hg—Mercury.
hp—horsepower.
ICI—Independent Commercial Importer.
in—inch(es).
K—Kelvin.
kg—kilogram(s).
km—kilometer(s).
kPa—kilopascal(s).
kW—kilowatt.
L/cyl—liters per cylinder.
m—meter(s).
max—maximum.
mg—milligram(s).
min—minute.
ml—milliliter(s).
mm—millimeter.
NIST—National Institute for Standards and Testing.
NMHC—Non-methane hydrocarbons.
NTIS—National Technical Information Service.
NO—nitric oxide.
NO_2—nitrogen dioxide.
NO_X—oxides of nitrogen.
No.—number.
O_2—oxygen.
pct—percent.
PM—particulate matter.
PMM—post-manufacture marinizer.
ppm—parts per million by volume.
ppmC—parts per million, carbon.
rpm—revolutions per minute.
s—second(s).
SAE—Society of Automotive Engineers.
SEA—Selective Enforcement Auditing.
SI—International system of units (i.e., metric).
THC—Total hydrocarbon.
THCE—Total hydrocarbon equivalent.
U.S.—United States.
U.S.C.—United States Code.
vs—versus.
W—watt(s).
wt—weight.

§ 94.4 Treatment of confidential information.

(a) Any manufacturer may assert that some or all of the information submitted pursuant to this part is entitled to confidential treatment as provided by 40 CFR part 2, subpart B.

(b) Any claim of confidentiality must accompany the information at the time it is submitted to EPA.

(c) To assert that information submitted pursuant to this part is confidential, a person or manufacturer must indicate clearly the items of information claimed confidential by marking, circling, bracketing, stamping, or otherwise specifying the confidential information. Furthermore, EPA requests, but does not require, that the submitter also provide a second copy of its submittal from which all confidential information has been deleted. If a need arises to publicly release nonconfidential information, EPA will assume that the submitter has accurately deleted the confidential information from this second copy.

(d) If a claim is made that some or all of the information submitted pursuant to this part is entitled to confidential treatment, the information covered by that confidentiality claim will be disclosed by EPA only to the extent and by means of the procedures set forth in 40 CFR part 2, subpart B.

(e) Information provided without a claim of confidentiality at the time of submission may be made available to

the public by EPA without further notice to the submitter, in accordance with 40 CFR 2.204(c)(2)(i)(A).

§ 94.5 Reference materials.

(a) The documents in paragraph (b) of this section have been incorporated by reference. The incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at U.S. EPA, OAR, 401 M Street, SW., Washington, DC 20460, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(b) The following paragraphs and tables set forth the material that has been incorporated by reference in this part:

(1) *ASTM material.* The following table sets forth material from the American Society for Testing and Materials that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of the part, other than this section, in which the matter is referenced. The second column is presented for information only and may not be all-inclusive. More recent versions of these standards may be used with advance approval of the Administrator. Copies of these materials may be obtained from American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428. The table follows:

Document number and name	40 CFR part 94 reference
ASTM D 86–97: ''Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure''.	§ 94.108 to Subpart D.
ASTM D 93–97: ''Standard Test Methods for Flash-Point by Pensky-Martens Closed Cup Tester''.	§ 94.108 to Subpart D.
ASTM D 129–95: ''Standard Test Method for Sulfur in Petroleum Products (General Bomb Method)''.	§ 94.108 to Subpart D.
ASTM D 287–92: ''Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products'' (Hydrometer Method).	§ 94.108 to Subpart D.
ASTM D 445–97: ''Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)''.	§ 94.108 to Subpart D.
ASTM D 613–95: ''Standard Test Method for Cetane Number of Diesel Fuel Oil''.	§ 94.108 to Subpart D.
ASTM D 1319–98: ''Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption''.	§ 94.108 to Subpart D.
ASTM D 2622–98: ''Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry''.	§ 94.108 to Subpart D.
ASTM D 5186–96: ''Standard Test Method for ''Determination of the Aromatic Content and Polynuclear Aromatic Content of Diesel Fuels and Aviation Turbine Fuels By Supercritical Fluid Chromatography''.	§ 94.108 to Subpart D.
ASTM E 29–93a: ''Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications''.	§§ 94.9, 94.218, 94.305, 94.508.

(2) [Reserved]

§ 94.6 Regulatory structure.

This section provides an overview of the regulatory structure of this part.

(a) The regulations of this Part 94 are intended to control emissions from in-use marine engines.

(b) The engines for which the regulations of this part (i.e., 40 CFR part 94) apply are specified by § 94.1, and by the definitions of § 94.2. The point at which an engine or vessel becomes subject to the regulations of this part is determined by the definitions of new marine engine and new marine vessel in § 94.2. Subpart J of this part contains provisions exempting certain engines and vessels from the emission standards in this part under special circumstances.

(c) To comply with the requirements of this part, a manufacturer must demonstrate to EPA that the engine meets the applicable standards of §§ 94.7 and 94.8, and all other requirements of this part. The requirements of this certification process are described in subparts C and D of this part.

(d) Subpart B of this part specifies procedures and equipment to be used for conducting emission tests for the purpose of the regulations of this part.

(e) Subparts E, F, and H of this part specify requirements for manufacturers after certification; that is during production and use of the engines.

(f) Subpart I of this part contains requirements applicable to the importation of marine engines covered by the provisions of this part.

(g) Subpart L of this part describes prohibited acts and contains other enforcement provisions relating to marine engines and vessels covered by the provisions of this part.

(h) Unless specified otherwise, the provisions of this part apply to all marine engines and vessels subject to the emission standards of this part.

§ 94.7 General standards and requirements.

(a) Marine engines and vessels may not be equipped with a defeat device.

(b) An engine may not be equipped with an emission control system for the purpose of complying with emission standards if such a system will cause or contribute to an unreasonable risk to public health, welfare, or safety in its operation or function.

(c) An engine with an emission control system may not emit any noxious or toxic substance which would not be emitted in the operation of the engine in the absence of such a system, except as specifically permitted by regulation.

(d) All engines subject to the emission standards of this part shall be equipped with a connection in the engine exhaust system that is located downstream of the engine and before any point at which the exhaust contacts water (or any other cooling/scrubbing medium) for the temporary attachment of gaseous and/or particulate emission sampling equipment. This connection shall be internally threaded with standard pipe threads of a size not larger than one-half inch, and shall be closed by a pipe-plug when not in use. (Equivalent connections are allowed.)

(e) Electronically controlled engines subject to the emission standards of this part shall broadcast on engine's controller area networks engine torque

(as percent of maximum) and engine speed.

§ 94.8 Exhaust emission standards.

(a) Exhaust emissions from marine compression-ignition engines shall not exceed the applicable exhaust emission standards contained in Table A–1 as follows:

TABLE A–1.—PRIMARY TIER 2 EXHAUST EMISSION STANDARDS (G/KW-HR)

Engine size—liters/cylinder, rated power	Category	Model Year [1]	THC+NO_X g//kW-hr	CO g/kW-hr	PM g/kW-hr
Disp. <0.9 and power ≥ 37 kW	Category 1	2005	7.5	5.0	0.40
0.9 ≤disp. <1.2 all power levels	Category 1	2004	7.2	5.0	0.30
1.2 ≤disp. <2.5 all power levels	Category 1	2004	7.2	5.0	0.20
2.5 ≤disp. <5.0 all power levels	Category 1	2007	7.2	5.0	0.20
5.0 ≤disp. <15.0 all power levels	Category 2	2007	7.8	5.0	0.27
15.0 ≤disp. <20.0 power < 3300 kW	Category 2	2007	8.7	5.0	0.50
15.0 ≤disp. <20.0 power ≥ 3300 kW	Category 2	2007	9.8	5.0	0.50
20.0 ≤disp. <25.0 all power levels	Category 2	2007	9.8	5.0	0.50
25.0 ≤disp. <30.0 all power levels	Category 2	2007	11.0	5.0	0.50

[1] The model years listed indicate the model years for which the specified standards start.

(b) Exhaust emissions of oxides of nitrogen, carbon monoxide, hydrocarbon, and particulate matter (and other compounds, as applicable) shall be measured using the procedures set forth in subpart B of this part.

(c) In lieu of the THC+NO_X standards, and PM standards specified in paragraph (a) of this section, manufacturers may elect to include engine families in the averaging, banking, and trading program, the provisions of which are specified in subpart D of this part. The manufacturer shall then set a family emission limit (FEL) which will serve as the standard for that engine family.

(d)(1) Naturally aspirated engines subject to the standards of this section shall not discharge crankcase emissions into the ambient atmosphere.

(2) For engines using turbochargers, pumps, blowers, or superchargers for air induction, if the engine discharges crankcase emissions into the ambient atmosphere in use, these crankcase emissions shall be included in all exhaust emission measurements.

(e) Exhaust emissions from propulsion engines subject to the standards (or FELs) in paragraph (a), (c), or (f) of this section shall not exceed:

(1) 1.20 times the applicable standards (or FELs) when tested in accordance with the supplemental test procedures specified in § 94.106 at loads greater than or equal to 45 percent of the maximum power at rated speed or 1.50 times the applicable standards (or FELs) at loads less than 45 percent of the maximum power at rated speed; or

(2) 1.25 times the applicable standards (or FELs) when tested over the whole power range in accordance with the supplemental test procedures specified in § 94.106.

(f) The following paragraphs define the requirements for low-emitting Blue Sky Series engines.

(1) *Voluntary standards.* Engines may be designated ''Blue Sky Series'' engines through the 2010 model year by meeting the voluntary standards listed in Table A–2, which apply to all certification and in-use testing, as follows:

TABLE A–2.—VOLUNTARY EMISSION STANDARDS (G/KW-HR)

Rated Brake Power (kW)	THC+NO_X	PM
Power ≥37 kW, and displ.<0.9	4.0	0.24
0.9≤displ.<1.2	4.0	0.18
1.2≤displ.<2.5	4.0	0.12
2.5≤displ.<5	5.0	0.12
5≤displ.<15	5.0	0.16
15 ≤disp. <20, and power <3300 kW	5.2	0.30
15 ≤disp. <20, and power ≥3300 kW	5.9	0.30
20 ≤disp. <25	5.9	0.30
25 ≤disp. <30	6.6	0.30

(2) *Additional standards.* Blue Sky Series engines are subject to all provisions that would otherwise apply under this part.

(3) *Test procedures.* Manufacturers may use an alternate procedure to demonstrate the desired level of emission control if approved in advance by the Administrator.

(g) Standards for alternative fuels. The standards described in this section apply to compression-ignition engines, irrespective of fuel, with the following two exceptions:

(1) Engines fueled with natural gas shall comply with NMHC+NO_X standards that are numerically equivalent to the THC+NO_X described in paragraph (a) of this section; and

(2) Engines fueled with alcohol fuel shall comply with THCE+NO_X standards that are numerically equivalent to the THC+NO_X described in paragraph (a) of this section.

§ 94.9 Compliance with emission standards.

(a) The general standards and requirements in § 94.7 and the emission standards in § 94.8 apply to each new engine throughout its useful life period. The useful life is specified both in years and in hours of operation, and ends when either of the values (hours of operation or years) is exceeded.

(1) The minimum useful life is 10 years or 10,000 hours of operation for Category 1 and 10 years or 20,000 hours of operation for Category 2.

(2) The manufacturer shall specify a longer useful life if the engine is designed to remain in service longer than the applicable minimum useful life without being rebuilt. A manufacturer's recommended time to remanufacture/rebuild longer than the minimum useful life is one indicator of a longer design life.

(3) Upon request by the manufacturer, the Administrator may allow useful life values shorter than the minimum values specified in paragraph (a)(1) of this section, provided:

(i) The useful life value may not be shorter than any of the following:

(A) 1000 hours of operation.

(B) The manufacturer's recommended overhaul interval.

(C) The mechanical warranty provided by the manufacturer to the owner.

(ii) The manufacturer must have documentation from in-use engines showing that these engines will rarely operate longer than the alternate useful life.

(iii) The manufacturer displays the useful life on the engine label.

(b) Certification is the process by which manufacturers apply for and obtain certificates of conformity from EPA, which allows the manufacturer to introduce into commerce new marine engines for sale or use in the U.S.

(1) Compliance with the applicable emission standards by an engine family shall be demonstrated by the certifying manufacturer before a certificate of conformity may be issued under § 94.208. Manufacturers shall demonstrate compliance using emission data, measured using the procedures specified in Subpart B of this part, from a low hour engine. A development engine that is equivalent in design to the marine engines being certified may be used for Category 2 certification.

(2) The emission values to compare with the standards shall be the emission values of a low hour engine, or a development engine, adjusted by the deterioration factors developed in accordance with the provisions of § 94.219. Before any emission value is compared with the standard, it shall be rounded, in accordance with ASTM E 29–93a (incorporated by reference at § 94.5), to the same number of significant figures as contained in the applicable standard.

(c) Upon request by the manufacturer, the Administrator may limit the applicability of exhaust emission requirements of § 94.8(e) as necessary for safety or to otherwise protect the engine.

§ 94.10 Warranty period.

(a) Warranties imposed by § 94.1107 shall apply for a period of operating hours equal to at least 50 percent of the useful life in operating hours or a period of years equal to at least 50 percent of the useful life in years, whichever comes first.

(b) Warranties imposed by § 94.1107 shall apply for a period not less than any mechanical warranties provided by the manufacturer to the owner.

§ 94.11 Requirements for rebuilding certified engines.

(a) The provisions of this section apply with respect to engines subject to the standards prescribed in § 94.8 and are applicable to the process of engine rebuilding. Engine rebuilding means to overhaul an engine or to otherwise perform extensive service on the engine (or on a portion of the engine or engine system). For the purpose of this definition, perform extensive service means to disassemble the engine (or portion of the engine or engine system), inspect and/or replace many of the parts, and reassemble the engine (or portion of the engine or engine system) in such a manner that significantly increases the service life of the resultant engine.

(b) When rebuilding an engine, portions of an engine, or an engine system, there must be a reasonable technical basis for knowing that the resultant engine is equivalent, from an emissions standpoint, to a certified configuration (i.e., tolerances, calibrations, specifications), and the model year(s) of the resulting engine configuration must be identified. A reasonable basis would exist if:

(1) Parts installed, whether the parts are new, used, or rebuilt, are such that a person familiar with the design and function of motor vehicle engines would reasonably believe that the parts perform the same function with respect to emission control as the original parts; and

(2) Any parameter adjustment or design element change is made only:

(i) In accordance with the original engine manufacturer's instructions; or

(ii) Where data or other reasonable technical basis exists that such parameter adjustment or design element change, when performed on the engine or similar engines, is not expected to adversely affect in-use emissions.

(c) When an engine is being rebuilt and remains installed or is reinstalled in the same vessel, it must be rebuilt to a configuration of the same or later model year as the original engine. When an engine is being replaced, the replacement engine must be an engine of (or rebuilt to) a certified configuration that is equivalent, from an emissions standpoint, to the engine being replaced.

(d) At time of rebuild, emission-related codes or signals from on-board monitoring systems may not be erased or reset without diagnosing and responding appropriately to the diagnostic codes, regardless of whether the systems are installed to satisfy requirements in § 94.211 or for other reasons and regardless of form or interface. Diagnostic systems must be free of all such codes when the rebuilt engine is returned to service. Such signals may not be rendered inoperative during the rebuilding process.

(e)(1) When conducting a rebuild, all critical emission-related components listed in Appendix I of this part not otherwise addressed by paragraphs (b) through (d) of this section must be checked and cleaned, adjusted, repaired, or replaced as necessary, following manufacturer recommended practices.

(2) During the installation of a rebuilt engine, all critical emission-related components listed in Appendix I of this part not otherwise addressed by paragraphs (b) through (d) of this section must be checked as necessary, following manufacturer recommended practices.

(f) Records shall be kept by parties conducting activities included in paragraphs (b) through (e) of this section. At minimum the records shall include the hours of operation at the time of rebuild, a listing of work performed on the engine and emission-related control components (including a listing of parts and components used, engine parameter adjustments, emission-related codes or signals responded to and reset), and work performed under paragraph (e) of this section.

(1) Parties may keep records in whatever format or system they choose as long as the records are understandable to an EPA enforcement officer or can be otherwise provided to an EPA enforcement officer in an understandable format when requested.

(2) Parties are not required to keep records of information that is not reasonably available through normal business practices including information on activities not conducted by themselves or information that they cannot reasonably access.

(3) Parties may keep records of their rebuilding practices for an engine family rather than on each individual engine rebuilt in cases where those rebuild practices are followed routinely.

(4) Records must be kept for a minimum of two years after the engine is rebuilt.

§ 94.12 Interim provisions.

This section contains provisions that apply for a limited number of calendar years or model years. These provisions apply instead of other provisions of this part.

(a) *Compliance date of standards.* Post-manufacture marinizers may elect to delay the model year of the Tier 2 standards as specified in § 94.8 by one year for each engine family. Compliance with the standards becomes mandatory after that year. Post-manufacture marinizers wishing to take advantage of this provision must inform the Designated Officer of their intent to do so in writing before the date that compliance with the standards would otherwise be mandatory.

(b) *Early banking of emission credits.* (1) A manufacturer may optionally certify engines manufactured before the date the Tier 2 standards take effect to earn emission credits under the averaging, banking, and trading program. Such optionally certified engines are subject to all provisions relating to mandatory certification and enforcement described in this part. Manufacturers may begin earning credits on January 28, 2000.

(2) Consistent with the provisions of Subpart D of this part, NO_X and PM emission credits may be generated from engines prior to the applicable effective compliance date of the applicable standard (i.e., the effective compliance date in § 94.8(a), as applicable), relative to baseline emission rates.

(3)(i) THC+NO_X credits generated under this paragraph (b) shall be calculated as specified in § 92.305, except that the baseline emission rate may be either the applicable standard or a measured THC+NO_X baseline level for the configuration with the lowest NO_X emission rate in the applicable engine family. The additional credits resulting from using a measured baseline (instead of the applicable standard) shall be discounted by 10 percent. This discount does not apply to the portion of the credits resulting from the engine's emissions being below the applicable standard. Baseline emission rates may not exceed the IMO NO_X limits.

(ii) PM credits generated under this paragraph (b) shall be calculated as specified in § 94.305, except that the applicable standard may be replaced by a measured PM baseline emission rate for the configuration with the lowest NO_X emission rate in the applicable engine family that is approved in advance by the Administrator. The additional credits resulting from using a measured baseline (instead of the applicable standard) shall be discounted by 10 percent. This discount does not apply to the portion of the credits resulting from the engine's emissions being below the applicable standard.

(4)(i) For post-manufacture marinizers, measured baseline emission levels may be based on emissions from a single engine for each engine family.

(ii) For all other manufacturers, measured baseline emission levels must be based on the average of emissions from at least three engines for each engine family.

(iii) The Administrator must approve any measured baselines in advance.

(5) For an engine to be eligible to generate early credits under this paragraph (b), its certified emission levels for all pollutants must be below the Tier 2 standards listed in § 94.8, with the following exception: PMMs may include in this early credit program Category 1 marine engines with certified emissions above the Tier 2 standards listed in § 94.8. Early credits generated by Category 1 marine engines with certified emissions above the Tier 2 standards listed in § 94.8 may not be used for model year 2008 or later engines.

(c) Testing of Category 1 engines subject to the requirements of this part that is conducted by the Administrator shall be performed using test fuels that meet the specifications in § 94.108 and have a sulfur content no higher than 0.20 weight percent, unless the PM emission rates are corrected for the effect of a higher fuel sulfur content.

(d) Post-manufacture marinizers may import an uncertified engine for marinization, in cases where the engine in the final marinized configuration is not subject to the standards of this part because:

(1) The model year of the marinized engine is prior to the first model year for which engines of that size are subject to the standards;

(2) The post-manufacture marinizer is marinizing the engine under paragraph (a) of this section; or

(3) The post-manufacture marinizer is granted hardship relief from the Tier 2 standards under § 94.209(c).

(e) Notwithstanding the other provisions of this part, the requirements of § 94.8(e) start with 2010 model year engines for post-manufacture marinizers and 2007 model year engines for all other engine manufacturers.

Subpart B—Test Procedures

§ 94.101 Applicability.

Provisions of this subpart apply for testing performed by the Administrator or a manufacturer.

§ 94.102 General provisions.

(a) The test procedures specified in this part are intended to produce emission measurements that are equivalent to emission measurements that would result from emission tests performed during in-use operation using the same engine configuration installed in a vessel.

(b) Test procedures otherwise allowed by the provisions of this subpart shall not be used where such procedures are not consistent with good engineering practice and the regulatory goal specified in paragraph (a) of this section.

(c) Alternate test procedures may be used if shown to yield equivalent results, and if approved in advance by the Administrator.

§ 94.103 Test procedures for Category 1 marine engines.

(a) Gaseous and particulate emissions shall be measured using the test procedures specified in 40 CFR part 89, except as otherwise specified in this subpart.

(b) The Administrator may specify changes to the provisions of paragraph (a) of this section that are necessary to comply with the general provisions of § 94.102.

§ 94.104 Test procedures for Category 2 marine engines.

(a) Gaseous and particulate emissions shall be measured using the test procedures specified in 40 CFR part 92, except as otherwise specified in this subpart.

(b)(1) The requirements of 40 CFR part 92 related to charge air temperatures, engine speed and load, and engine air inlet restriction pressures do not apply for marine engines.

(2) For marine engine testing, charge air temperatures, engine speed and load, and engine air inlet restriction pressures shall be representative of typical in-use marine engine conditions.

(c) The Administrator may specify changes to the provisions of paragraph (a) of this section that are necessary to comply with the general provisions of § 94.102.

§ 94.105 Duty cycles.

(a) *Overview.* For the purpose of determining compliance with the emission standards of § 94.8, except for those in § 94.8(e), engines shall be tested using the appropriate duty cycles described in this section.

(b) *General cycle.* Propulsion engines that are used with (or intended to be used with) fixed-pitch propellers, and any other engines for the other duty cycles of this section don't apply, shall be tested using the duty cycle described in the following Table B–1:

TABLE B–1.—GENERAL MARINE DUTY CYCLE

Mode No.	Engine speed [1] (percent of maximum test speed)	Percent of maximum test power [2]	Minimum time in mode (minutes)	Weighting factors
1	100	100	5.0	0.20
2	91	75	5.0	0.50

TABLE B–1.—GENERAL MARINE DUTY CYCLE—Continued

Mode No.	Engine speed [1] (percent of maximum test speed)	Percent of maximum test power [2]	Minimum time in mode (minutes)	Weighting factors
3	80	50	5.0	0.15
4	63	25	5.0	0.15

[1] Engine speed: ±2 percent of point.
[2] Power: ±2 percent of engine maximum value.

(c) *Variable-pitch and electrically coupled propellers.* (1) Constant-speed propulsion engines that are used with (or intended to be used with) variable-pitch propellers or with electrically coupled propellers shall be tested using the duty cycle described in the following Table B–2:

TABLE B–2.—DUTY CYCLE FOR CONSTANT-SPEED PROPULSION ENGINES

Mode No.	Engine speed [1] (percent of maximum test speed)	Percent of maximum test power [2]	Minimum time in mode (minutes)	Weighting factors
1	100	100	5.0	0.20
2	100	75	5.0	0.50
3	100	50	5.0	0.15
4	100	25	5.0	0.15

[1] Engine speed: ±2 percent of point.
[2] Power: ±2 percent of engine maximum value.

(2) For the purpose of determining compliance with the emission standards of § 94.8, variable-speed propulsion engines that are used with (or intended to be used with) variable-pitch propellers or with electrically coupled propellers shall be tested using the duty cycle described in Table B–3, which follows:

TABLE B–3.—DUTY CYCLE FOR VARIABLE SPEED PROPULSION ENGINES USED ON NON-PROPELLER LAW VESSELS AND FOR VARIABLE SPEED AUXILIARY ENGINES

Test segment	Mode No.	Engine speed [1]	Percent of maximum test torque [2]	Minimum time in mode (minutes)	Weighting factors
1	1	Maximum Test Speed	100	5.0	0.15
1	2	Maximum Test Speed	75	5.0	0.15
1	3	Maximum Test Speed	50	5.0	0.15
1	4	Maximum Test Speed	10	5.0	0.10
2	5	Intermediate	100	5.0	0.10
2	6	Intermediate	75	5.0	0.10
2	7	Intermediate	50	5.0	0.10
2	8	Idle	0	5.0	0.15

[1] Engine speed (non-idle): ±2 percent of point. Engine speed (idle): Within manufacturer's specifications. Idle speed is specified by the manufacturer.
[2] Torque (non-idle): ±2 percent of engine maximum value. Torque (idle): minimum fueling rate Load less than 5 percent of peak torque.

(d) *Auxiliary.* For the purpose of determining compliance with the emission standards of § 94.8:

(1) Constant speed auxiliary engines shall be tested using the duty cycle described in Table B–4, which follows:

TABLE B–4.—DUTY CYCLE FOR CONSTANT-SPEED AUXILIARY ENGINES

Mode No.	Engine speed [1]	Percent of maximum test torque [2]	Minimum time in mode (minutes)	Weighting factors
1	Maximum Test Speed	100	5.0	0.05
2	Maximum Test Speed	75	5.0	0.25
3	Maximum Test Speed	50	5.0	0.30
4	Maximum Test Speed	25	5.0	0.30

TABLE B–4.—DUTY CYCLE FOR CONSTANT-SPEED AUXILIARY ENGINES—Continued

Mode No.	Engine speed [1]	Percent of maximum test torque [2]	Minimum time in mode (minutes)	Weighting factors
5	Maximum Test Speed	10	5.0	0.10

[1] Engine speed: ±2 percent of point.
[2] Torque: ±2 percent of engine maximum value.

(2) Variable speed auxiliary engines shall be tested using the duty cycle described in Table B–3 in paragraph (c)(2) of this section.

§ 94.106 Supplemental test procedures.

This section describes the test procedures for supplemental testing conducted to determine compliance with the exhaust emission requirements of § 94.8(e). In general, the supplemental test procedures are the same as those otherwise specified by this subpart, except that they cover any speeds, loads, ambient conditions, and operating parameters that may be experienced in use. The test procedures specified by other sections in this subpart also apply to these tests, except as specified in this section.

(a) Notwithstanding other provisions of this subpart, testing conducted to determine compliance with the exhaust emission requirements of § 94.8(e) may be conducted:

(1) At any speed and load (or any combination of speeds and loads that is nominally steady-state) within the applicable Not To Exceed Zone specified in paragraph (b) of this section;

(2)(i) Without correction, at any intake air temperature between 13°C and 35°C (or between 13°C and 30°C for engines not drawing intake air directly from a space that could be heated by the engine);

(ii) Without correction at any ambient water temperature (or equivalent) between 5°C and 27°C;

(iii) Without correction at any ambient humidity between 7.1 and 10.7 grams of moisture per kilogram of dry air; and

(3) With a continuous sampling period not less than 30 seconds in duration.

(b) The specified Not to Exceed Zones for marine engines are defined as follows. These Not to Exceed Zones apply, unless a modified zone is established under paragraph (c) of this section.

(1) For Category 1 engines certified using the duty cycle specified in § 94.105(a), the Not to Exceed zones are defined as follows:

(i) The Not to Exceed zone is the region between the curves power = $1.15 \times SPD^2$ and power = $0.85 \times SPD^4$, excluding all operation below 25% of maximum power at rated speed and excluding all operation below 63% of maximum test speed.

(ii) This zone is divided into two subzones, one above and one below 45% of maximum power at rated speed.

(iii) SPD in paragraph (b)(1)(i) of this section refers to percent of maximum test speed.

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(iv) See Figure B–1 for an illustration of this Not to Exceed zone which follows:

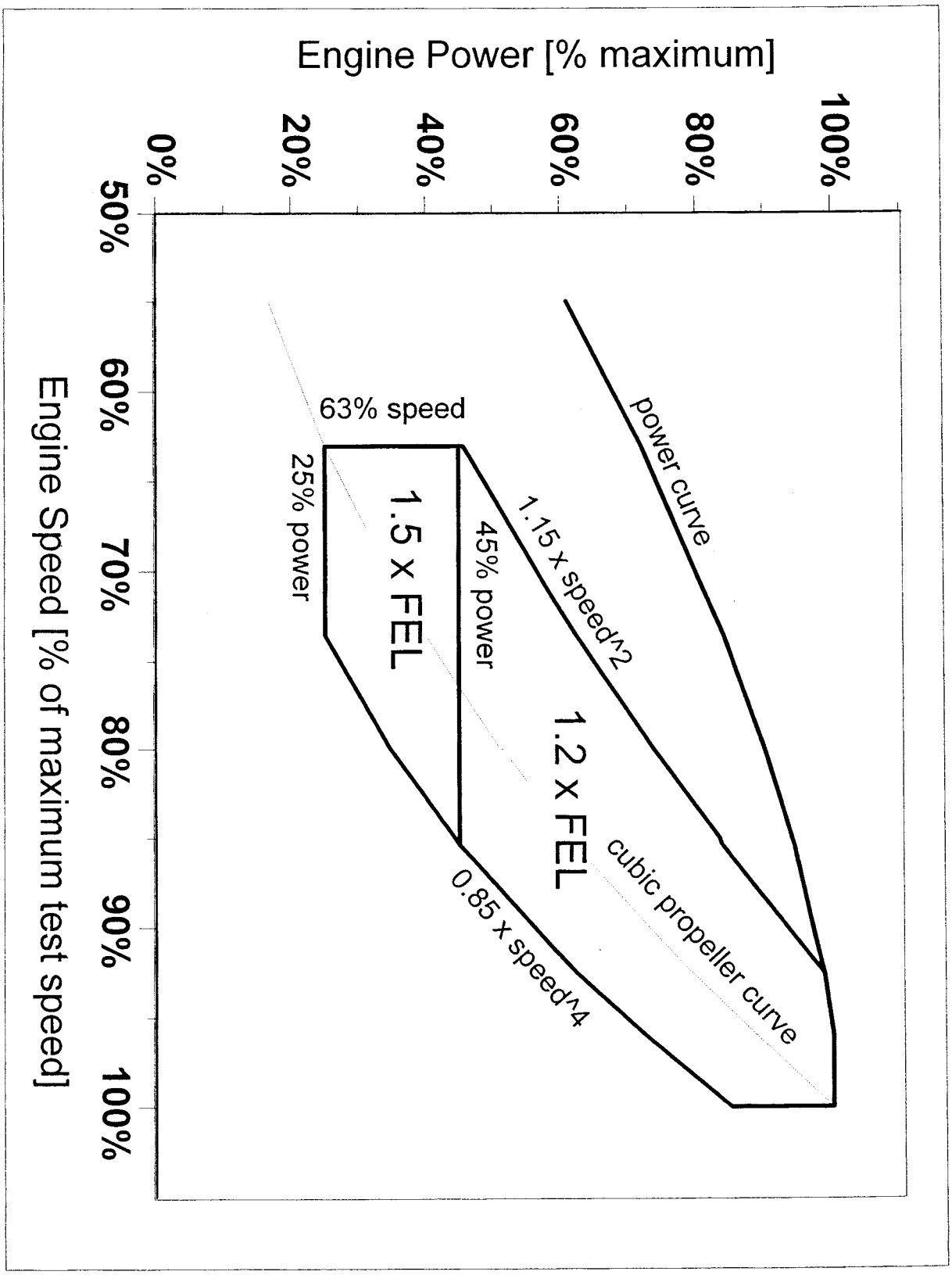

Figure B-1

(2) For Category 2 engines certified using the duty cycle specified in § 94.105(a), the Not to Exceed zones are defined as follows:

(i) The Not to Exceed zone is the region between the curves power = 1.04 × SPD^2 and power = 0.76 × SPD^4, excluding all operation below 25% of maximum power at rated speed and excluding all operation below 63% of maximum test speed.

(ii) This zone is divided into two subzones, one above and one below 45% of maximum power at rated speed.

(iii) SPD in paragraph (b)(2)(i) of this section refers to percent of maximum test speed.

(iv) See Figure B–2 in paragraph (b)(3) of this section for an illustration of this Not to Exceed zone.

(3) For engines certified using the duty cycle specified in § 94.105(b)(2), the Not to Exceed zones are defined as follows:

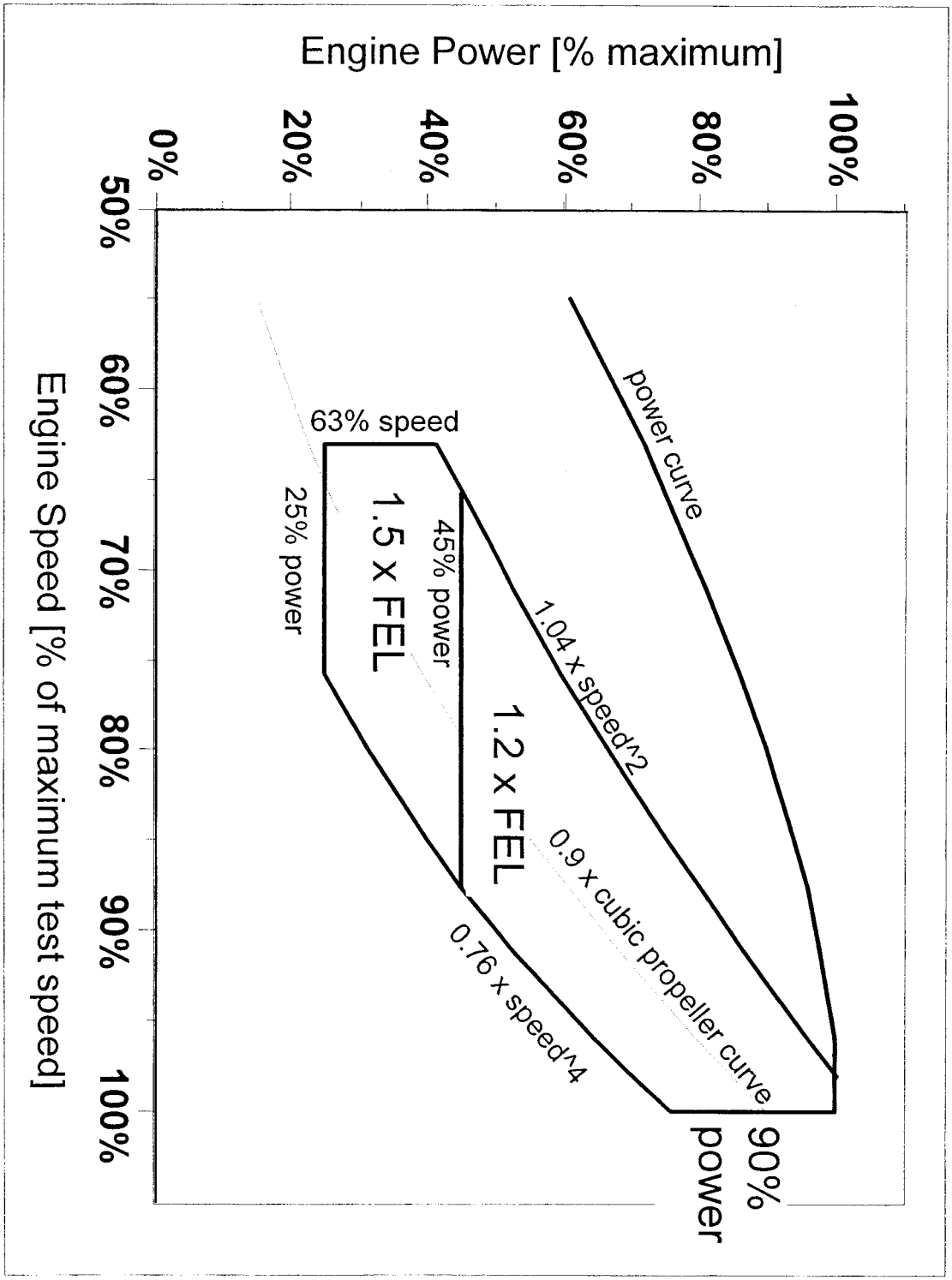

Figure B-2

(i) The Not to Exceed zone is the region above the curve power = 0.85 × SPD^2, excluding all operation below 25% of maximum power at rated speed and excluding all operation below 63% of maximum test speed.

(ii) This zone is divided into two subzones, one above and one below 45% of maximum power at rated speed.

(iii) SPD in paragraph (b)(3)(i) of this section refers to percent of maximum test speed.

(iv) See Figure B–3 for an illustration of this Not to Exceed zone:

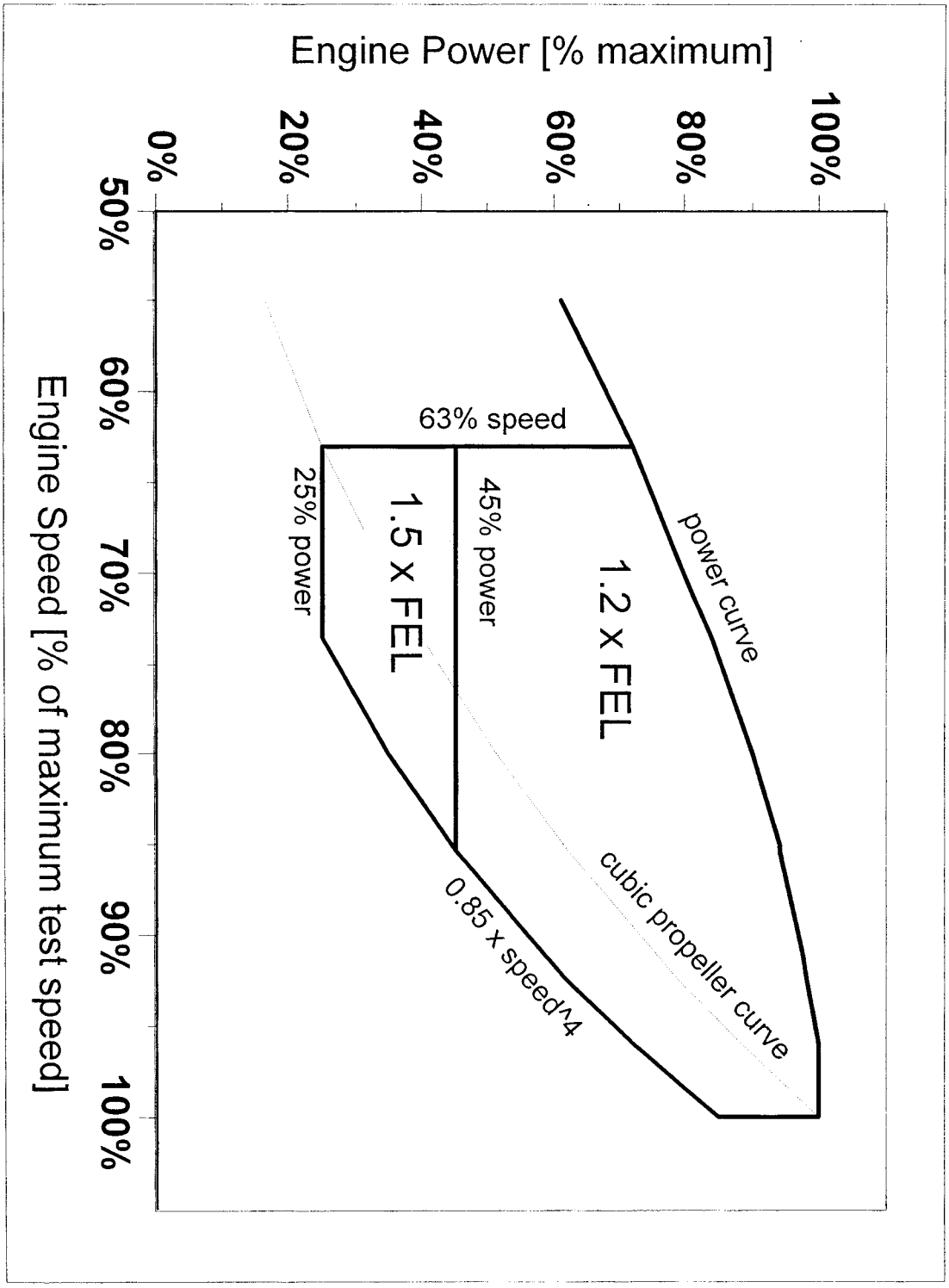

Figure B-3

(4) For engines certified using the duty cycle specified in § 94.105(b)(1), the Not to Exceed Zone is defined as any load greater than or equal to 25 percent of maximum power at rated speed, and at any speed at which the engine operates in use.

(c)(1) Upon request by the manufacturer, the Administrator may specify a narrower Not to Exceed Zone for an engine family at the time of certification, provided that the narrower Not to Exceed Zone includes all speeds greater than 63 percent of maximum test speed and loads greater than 25 percent of maximum power at rated speed at which the engines are expected to normally operate in use.

(2) At the time of certification, the Administrator may specify, or require the manufacturer to specify, a broader Not to Exceed Zone for an engine family, provided that the broader Not to Exceed Zone includes only speeds greater than 63 percent of maximum test speed and loads greater than 25 percent of maximum power at rated speed at which the engines are expected to normally operate in use.

(d) Testing conducted to determine compliance with the exhaust emission requirements of § 94.8(e) may be conducted at any ambient air temperature or humidity outside the ranges specified in paragraph (a)(2) of this section, provided that emission measurements are corrected to be equivalent to measurements within the ranges specified in paragraph (a)(2) of this section. Correction of emission measurements made in accordance with this paragraph (d) shall be made in accordance with good engineering practice. The measurements shall be corrected to be within the range using the minimum possible correction.

(e) Testing conducted under this section may not include engine starting.

§ 94.107 Determination of maximum test speed.

(a) *Overview.* This section specifies how to determine maximum test speed from a lug curve. This maximum test speed is used in §§ 94.105 and 94.106 (including the tolerances for engine speed specified in § 94.105).

(b) *Generation of lug curve.* Prior to beginning emission testing, generate maximum measured brakepower versus engine speed data points using the applicable method specified in 40 CFR 86.1332. These data points form the lug curve. It is not necessary to generate the entire lug curve. For the portion of the curve where power increases with increasing speed, it is not necessary to generate points with power less than 90 percent of the maximum power value. For the portion of the curve where power decreases with increasing speed, it is not necessary to generate points with power less than 75 percent of the maximum power value.

(c) *Normalization of lug curve.* (1) Identify the point (power and speed) on the lug curve at which maximum power occurs.

(2) Normalize the power values of the lug curve by dividing them by the maximum power value identified in paragraph (b)(1) of this section, and multiplying the resulting values by 100.

(3) Normalize the engine speed values of the lug curve by dividing them by the speed at which maximum power occurs, which is identified in paragraph (b)(1) of this section, and multiplying the resulting values by 100.

(4) Maximum engine power is located on the normalized lug curve at 100 percent power and 100 percent speed.

(d) *Determination of maximum test speed.* Calculate the maximum test speed from the speedfactor analysis described in this paragraph (d).

(1) For a given combination of engine power and speed (i.e., a given power/speed point), the speedfactor is the distance to the normalized power/speed point from the zero power, zero speed point. The value of the speedfactor is defined as:

$$\text{Speedfactor} = \sqrt{(\text{power})^2 + (\text{speed})^2}$$

(2) Calculate speedfactors for the power/speed data points on the lug curve, and determine the maximum value.

(3) Maximum test speed is the speed at which the maximum value for the speedfactor occurs.

(e) For constant-speed engines, rated speed is the maximum test speed.

§ 94.108 Test fuels.

(a) *Distillate diesel test fuel.* (1) The diesel fuels for testing marine engines designed to operate on distillate diesel fuel shall be clean and bright, with pour and cloud points adequate for operability. The diesel fuel may contain nonmetallic additives as follows: cetane improver, metal deactivator, antioxidant, dehazer, antirust, pour depressant, dye, dispersant, and biocide. The diesel fuel shall also meet the specifications (as determined using methods incorporated by reference at § 94.5) in Table B–5, or substantially equivalent specifications approved by the Administrator, as follows:

TABLE B–5.—FEDERAL TEST FUEL SPECIFICATIONS

Item	Procedure (ASTM) [1]	Value (Type 2–D)
Cetane	D 613–95	40–48
Distillation Range:		
IBP, °C	D 86–97	171–204
10% point, °C	D 86–97	204–238
50% point, °C	D 86–97	243–282
90% point, °C	D 86–97	293–332
EP, °C	D 86–97	321–366
Gravity, API	D 287–92	32–37
Total Sulfur, weight%	D 129–95 or D 2622–98	0.03–0.80
Hydrocarbon composition:		
Aromatics, % vol.	D 1319–98 or D 5186–96	10 [2]
Paraffins, Naphthalenes, Olefins	D 1319–98	[3]
Flashpoint, °C (minimum)	D 93–97	54
Viscosity @ 38 °C, Centistokes	D 445–97	2.0–3.2

[1] All ASTM procedures in this table have been incorporated by reference. See § 94.6.
[2] Minimum.
[3] Remainder.

(2) Other diesel fuels may be used for testing provided:

(i) They are commercially available; and

(ii) Information, acceptable to the Administrator, is provided to show that only the designated fuel would be used in service; and

(iii) Use of a fuel listed under paragraph (a)(1) of this section would have a detrimental effect on emissions or durability; and

(iv) Written approval from the Administrator of the fuel specifications is provided prior to the start of testing.

(3) The specification of the fuel to be used under paragraphs (a)(1), and (a)(2) of this section shall be reported in the application for certification.

(b) *Other fuel types.* For engines that are designed to be capable of using a type of fuel (or mixed fuel) instead of or in addition to distillate diesel fuel (e.g., natural gas, methanol, or nondistillate diesel), and that are expected to use that type of fuel (or mixed fuel) in service, a commercially available fuel of that type shall be used for exhaust emission testing. The manufacturer shall propose for the Administrator's approval a set of test fuel specifications that take into account the engine design and the properties of commercially available fuels. The Administrator may require testing on each fuel if it is designed to operate on more than one fuel. These test fuel specifications shall be reported in the application for certification.

(c) *Service accumulation fuel.* Fuel used for service accumulation shall be representative of the typical fuel expected to be used by the engines in service.

(d) *Correction for sulfur.* (1) Particulate emission measurements from engines without exhaust aftertreatment obtained using a diesel fuel containing more than 0.40 weight percent sulfur may be adjusted to a sulfur content of 0.40 weight percent.

(2) Adjustments to the particulate measurement shall be made using the following equation:

$$PMadj = PM - [BSFC * 0.0917 * (FSF - 0.0040)]$$

Where:

PMadj=adjusted measured PM level [g/kW-hr]

PM=measured weighted PM level [g/KW-hr]

BSFC=measured brake specific fuel consumption [g/KW-hr]

FSF=fuel sulfur weight fraction

Subpart C—Certification Provisions

§ 94.201 Applicability.

The requirements of this subpart are applicable to manufacturers of engines subject to the standards of subpart A of this part.

§ 94.202 Definitions.

The definitions of subpart A of this part apply to this subpart.

§ 94.203 Application for certification.

(a) For each engine family that complies with all applicable standards and requirements, the manufacturer shall submit to the Administrator a completed application for a certificate of conformity.

(b) The application shall be approved and signed by the authorized representative of the manufacturer.

(c) The application shall be updated and corrected by amendment, where necessary, as provided for in § 94.210 to accurately reflect the manufacturer's production.

(d) Each application shall include all the following information:

(1)(i) A description of the basic engine design, including but not limited to, the engine family specifications, the provisions of which are contained in § 94.204.

(ii) A list of distinguishable configurations to be included in the engine family.

(2) An explanation of how the emission control system operates, including detailed descriptions of:

(i) All emission control system components;

(ii) The injection timing map or maps (i.e., degrees before or after top-dead-center), and any functional dependence of such timing on other operational parameters (e.g., engine coolant temperature or engine speed);

(iii) Each auxiliary emission control device (AECD); and

(iv) All fuel system components to be installed on any production or test engine(s).

(3) A description of the test engine.

(4) Special or alternate test procedures, if applicable.

(5) A description of the operating cycle and the period of operation necessary to accumulate service hours on the test engine and stabilize emission levels.

(6) A description of all adjustable operating parameters (e.g., injection timing and fuel rate), including all the following:

(i) The nominal or recommended setting and the associated production tolerances.

(ii) The physically adjustable range (Note: if this is different than the intended adjustable range, describe why these are different).

(iii) The limits or stops used to limit adjustable ranges.

(iv) Production tolerances of the limits or stops used to establish each physically adjustable range.

(v) Information relating to the reason that the physical limits or stops used to establish the physically adjustable range of each parameter, or any other means used to inhibit adjustment, are the most effective means possible of preventing adjustment of parameters to settings outside the manufacturer's specified adjustable ranges on in-use engines.

(7) For families participating in the averaging, banking, and trading program, the information specified in subpart D of this part.

(8) Projected U.S.-directed production volume information for each configuration.

(9) A description of the test equipment and fuel used.

(10) All test data obtained by the manufacturer on each test engine.

(11) The intended useful life period for the engine family, in accordance with § 94.9(a).

(12) The intended deterioration factors for the engine family, in accordance with § 94.218.

(13) All information required for EPA to interpret all messages and parameters broadcast on an engine's controller area network, including but not limited to message or parameter identification, scaling, limit, offset, and transfer function. (The manufacturer may reference publicly released controller area network standards where applicable. The format of this information shall be provided in a format similar to publicly released documents pertaining to controller area network standards.)

(14) A statement that the all the engines included in the engine family comply with the Not To Exceed standards specified in § 94.8(e) when operated under all conditions which may reasonably be expected to be encountered in normal operation and use; the manufacturer also must provide a detailed description of all testing, engineering analyses, and other information which provides the basis for this statement.

(15) An unconditional statement certifying that all engines included in the engine family comply with all requirements of this part and the Clean Air Act.

(16) A statement indicating duty-cycle and application of the engine (e.g., used to propel planing vessels, use to propel vessels with variable-pitch propellers, constant-speed auxiliary, etc.).

(e) At the Administrator's request, the manufacturer shall supply such additional information as may be required to evaluate the application.

(f)(1) If the manufacturer submits some or all of the information specified in paragraph (d) of this section in

advance of its full application for certification, the Administrator shall review the information and make the determinations required in § 94.208 (d) within 90 days of the manufacturer's submittal.

(2) The 90-day decision period is exclusive of any elapsed time during which EPA is waiting for additional information requested from a manufacturer regarding an adjustable parameter (the 90-day period resumes upon receipt of the manufacturer's response). For example, if EPA requests additional information 30 days after the manufacturer submits information under paragraph (f)(1) of this section, then the Administrator would make a determination within 60 days of the receipt of the requested information from the manufacturer.

(g)(1) The Administrator may modify the information submission requirements of paragraph (d) of this section, provided that all of the information specified therein is maintained by the manufacturer as required by § 94.215, and amended, updated, or corrected as necessary.

(2) For the purposes of this paragraph (g), § 94.215 includes all information specified in paragraph (d) of this section, whether or not such information is actually submitted to the Administrator for any particular model year.

(3) The Administrator may review a manufacturer's records at any time. At the Administrator's discretion, this review may take place either at the manufacturer's facility or at another facility designated by the Administrator.

§ 94.204 Designation of engine families.

This section specifies the procedure and requirements for grouping of engines into engine families.

(a) Manufacturers shall divide their engines into groupings of engines which are expected to have similar emission characteristics throughout their useful life. Each group shall be defined as a separate engine family.

(b) For Category 1 marine engines, the following characteristics distinguish engine families:

(1) Fuel;

(2) Cooling method (including cooling medium);

(3) Method of air aspiration;

(4) Method of exhaust aftertreatment (for example, catalytic converter or particulate trap);

(5) Combustion chamber design;

(6) Bore;

(7) Stroke;

(8) Number of cylinders, (engines with aftertreatment devices only);

(9) Cylinder arrangement (engines with aftertreatment devices only); and

(10) Fuel system configuration

(c) For Category 2 marine engines, the following characteristics distinguish engine families:

(1) The combustion cycle (e.g., diesel cycle);

(2) The type of engine cooling employed (air-cooled or water-cooled), and procedure(s) employed to maintain engine temperature within desired limits (thermostat, on-off radiator fan(s), radiator shutters, etc.);

(3) The bore and stroke dimensions;

(4) The approximate intake and exhaust event timing and duration (valve or port);

(5) The location of the intake and exhaust valves (or ports);

(6) The size of the intake and exhaust valves (or ports);

(7) The overall injection, or as appropriate ignition, timing characteristics (i.e., the deviation of the timing curves from the optimal fuel economy timing curve must be similar in degree);

(8) The combustion chamber configuration and the surface-to-volume ratio of the combustion chamber when the piston is at top dead center position, using nominal combustion chamber dimensions;

(9) The location of the piston rings on the piston;

(10) The method of air aspiration (turbocharged, supercharged, naturally aspirated, Roots blown);

(11) The turbocharger or supercharger general performance characteristics (e.g., approximate boost pressure, approximate response time, approximate size relative to engine displacement);

(12) The type of air inlet cooler (air-to-air, air-to-liquid, approximate degree to which inlet air is cooled);

(13) The intake manifold induction port size and configuration;

(14) The type of fuel and fuel system configuration;

(15) The configuration of the fuel injectors and approximate injection pressure;

(16) The type of fuel injection system controls (i.e., mechanical or electronic);

(17) The type of smoke control system;

(18) The exhaust manifold port size and configuration; and

(19) The type of exhaust aftertreatment system (oxidation catalyst, particulate trap), and characteristics of the aftertreatment system (catalyst loading, converter size vs engine size).

(d) Upon request by the manufacturer, engines that are eligible to be included in the same engine family based on the criteria in paragraph (b) or (c) of this section may be divided into different engine families. This request must be accompanied by information the manufacturer believes supports the use of these different engine families.

(e) Upon request by the manufacturer, the Administrator may allow engines that would be required to be grouped into separate engine families based on the criteria in paragraph (b) or (c) of this section to be grouped into a single engine family if the manufacturer demonstrates that the engines will have similar emission characteristics. This request must be accompanied by emission information supporting the appropriateness of such combined engine families.

§ 94.205 Prohibited controls, adjustable parameters.

(a) Any system installed on, or incorporated in, a new engine to enable the engine to conform to the standards contained in this part:

(1) Shall not cause a violation of the general standards of § 94.7.

(2) Shall function during all in-use operation, except as otherwise allowed by this part.

(b) Nonroad engines equipped with adjustable parameters must comply with all requirements of this subpart for any adjustment in the physically adjustable range.

(c) The Administrator may require that adjustable parameters be set to any specification within its adjustable range for certification, selective enforcement audit, or in-use testing to determine compliance with the requirements of this subpart.

(d) In specifying the adjustable range of each adjustable parameter on a new engine, the manufacturer, shall:

(1) Ensure that safe engine operating characteristics are available within that range, as required by section 202(a)(4) of the Clean Air Act, taking into consideration the production tolerances; and

(2) To the maximum extent practicable, limit the physical range of adjustability to that which is necessary for proper operation of the engine.

§ 94.206 Required information.

(a) The manufacturer shall perform the tests required by the applicable test procedures, and submit to the Administrator the information required by this section: *Provided*, that if requested by the manufacturer, the Administrator may waive any requirement of this section for testing of engines for which the required emission data are otherwise available.

(b) The manufacturer shall submit exhaust emission deterioration factors,

with supporting data. The determination of the deterioration factors shall be conducted in accordance with § 94.218 to ensure that the engines covered by a certificate issued under § 94.208 will meet all of the emission standards in § 94.8 in use for the useful life of the engine.

(c) The manufacturer shall submit emission data on such engines tested in accordance with the applicable test procedures of Subpart B of this part. These data shall include zero hour data, if generated. In lieu of providing the emission data required by paragraph (a) of this section, the Administrator may, upon request by the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other testing information) that the engine will conform with the applicable emission standards of § 94.8.

(d) The manufacturer shall submit a statement that the engines for which certification is requested conform to the requirements in § 94.7 and that the descriptions of tests performed to ascertain compliance with the general standards in § 94.7, and the data derived from such tests, are available to the Administrator upon request.

(e) The manufacturer shall submit a statement that the emission data engine used to demonstrate compliance with the applicable standards of this part is in all material respects as described in the manufacturer's application for certification; that it has been tested in accordance with the applicable test procedures utilizing the fuels and equipment described in the application for certification; and that on the basis of such tests, the engine family conforms to the requirements of this part. If, on the basis of the data supplied and any additional data as required by the Administrator, the Administrator determines that the test engine was not as described in the application for certification or was not tested in accordance with the applicable test procedures utilizing the fuels and equipment as described in the application for certification, the Administrator may make the determination that the engine does not meet the applicable standards. If the Administrator makes such a determination, he/she may withhold, suspend, or revoke the certificate of conformity under § 94.208 (c)(3)(i).

§ 94.207 Special test procedures.

(a) *Establishment of special test procedures by EPA.* The Administrator may, on the basis of written application by a manufacturer, establish special test procedures other than those set forth in this part, for any engine that the Administrator determines is not susceptible to satisfactory testing under the specified test procedures set forth in Subpart B of this part.

(b) *Use of alternate test procedures by a manufacturer.* (1) A manufacturer may elect to use an alternate test procedure, provided that it is equivalent to the specified procedures with respect to the demonstration of compliance, its use is approved in advance by the Administrator, and the basis for the equivalence with the specified test procedures is fully described in the manufacturer's application.

(2) The Administrator may reject data generated under alternate test procedures if the data do not correlate with data generated under the specified procedures.

§ 94.208 Certification.

(a) If, after a review of the application for certification, test reports and data acquired from an engine or from a development data engine, and any other information required or obtained by EPA, the Administrator determines that the application is complete and that the engine family meets the requirements of the Act and this part, he/she will issue a certificate of conformity with respect to such engine family, except as provided by paragraph (c)(3) of this section. The certificate of conformity is valid for each engine family from the date of issuance by EPA until 31 December of the model year or calendar year for which it is issued and upon such terms and conditions as the Administrator deems necessary or appropriate to ensure that the production engines covered by the certificate will meet the requirements of the Act and of this part.

(b) [Reserved]

(c)(1) The manufacturer shall bear the burden of establishing to the satisfaction of the Administrator that the conditions upon which the certificates were issued were satisfied or excused.

(2) The Administrator will determine whether the test data included in the application represents all engines of the engine family.

(3) Notwithstanding the fact that any engine(s) may comply with other provisions of this subpart, the Administrator may withhold or deny the issuance of any certificate of conformity, or suspend or revoke any such certificate(s) which has (have) been issued with respect to any such engine(s) if:

(i) The manufacturer submits false or incomplete information in its application for certification thereof;

(ii) The manufacturer renders inaccurate any test data which it submits pertaining thereto or otherwise circumvents the intent of the Act, or of this part with respect to such engine;

(iii) Any EPA Enforcement Officer is denied access on the terms specified in § 94.215 to any facility or portion thereof which contains any of the following:

(A) An engine which is scheduled to undergo emissions testing, or which is undergoing emissions testing, or which has undergone emissions testing; or

(B) Any components used or considered for use in the construction, modification or buildup of any engine which is scheduled to undergo emissions testing, or which is undergoing emissions testing, or which has undergone emissions testing for purposes of emissions certification; or

(C) Any production engine which is or will be claimed by the manufacturer to be covered by the certificate; or

(D) Any step in the construction of the engine; or

(E) Any records, documents, reports or histories required by this part to be kept concerning any of the items listed in paragraphs (c)(3)(iii)(A) through (D) of this section; or

(iv) Any EPA Enforcement Officer is denied ''reasonable assistance'' (as defined in § 94.215).

(4) In any case in which a manufacturer knowingly submits false or inaccurate information or knowingly renders inaccurate or invalid any test data or commits any other fraudulent acts and such acts contribute substantially to the Administrator's decision to issue a certificate of conformity, the Administrator may deem such certificate void ab initio.

(5) In any case in which certification of an engine is to be withheld, denied, revoked or suspended under paragraph (c)(3) of this section, and in which the Administrator has presented to the manufacturer involved reasonable evidence that a violation of § 94.215 in fact occurred, the manufacturer, if it wishes to contend that, even though the violation occurred, the engine in question was not involved in the violation to a degree that would warrant withholding, denial, revocation or suspension of certification under paragraph (c)(3) of this section, shall have the burden of establishing that contention to the satisfaction of the Administrator.

(6) Any revocation, suspension, or voiding of certification under paragraph (c)(3) of this section shall:

(i) Be made only after the manufacturer concerned has been offered an opportunity for a hearing

conducted in accordance with § 94.216; and

(ii) Extend no further than to forbid the introduction into commerce of engines previously covered by the certification which are still in the hands of the manufacturer, except in cases of such fraud or other misconduct that makes the certification invalid ab initio.

(7) The manufacturer may request, within 30 days of receiving notification, that any determination made by the Administrator under paragraph (c)(3) of this section to withhold or deny certification be reviewed in a hearing conducted in accordance with § 94.216. The request shall be in writing, signed by an authorized representative of the manufacturer and shall include a statement specifying the manufacturer's objections to the Administrator's determinations, and data in support of such objections. If the Administrator finds, after a review of the request and supporting data, that the request raises a substantial factual issue, he/she will grant the request with respect to such issue.

(d) In approving an application for certification, the Administrator may specify or require the manufacturer to specify:

(1) A broader range of adjustability than recommended by the manufacturer for those engine parameters which are subject to adjustment, if the Administrator determines that it is not reasonable to expect the parameter to be kept adjusted within the recommended range in use;

(2) A longer useful life period, if the Administrator determines that the useful life of the engines in the engine family, as defined in § 94.2, is longer than the period specified by the manufacturer;

(3) Larger deterioration factors, if the Administrator determines that the deterioration factors specified by the manufacturer do not meet the requirements of § 94.218; and/or

(4) A broader Not to Exceed Zone subject to the provisions of § 94.106(b).

(e) Within 30 days following receipt of notification of the Administrator's determinations made under paragraph (d) of this section, the manufacturer may request a hearing on the Administrator's determinations. The request shall be in writing, signed by an authorized representative of the manufacturer and shall include a statement specifying the manufacturer's objections to the Administrator's determinations and data in support of such objections. If, after review of the request and supporting data, the Administrator finds that the request raises a substantial factual issue, the manufacturer shall be provided with a hearing in accordance with § 94.216 with respect to such issue.

§ 94.209 Special provisions for post-manufacture marinizers.

(a) *Broader engine families.* To be eligible to use the provisions of this paragraph (a), the manufacturer must demonstrate that it is a post-manufacture marinizer as defined in § 94.2 and that the base engines used for modification shall have a valid certificate of conformity issued under 40 CFR part 89 or 40 CFR part 92 or the heavy-duty engine provisions of 40 CFR part 86.

(1) In lieu of the requirements of § 94.204, an eligible manufacturer may group all its engine models into an engine family consisting of engines within a single category of engines that have similar emission deterioration characteristics.

(2) The manufacturer remains subject to all provisions of this part other than § 94.204 for engines using the engine family defined in paragraph (a)(1) of this section.

(b) *Hardship relief.* Post-manufacture marinizers may take any of the otherwise prohibited actions identified in § 94.1103(a)(1) if approved in advance by the Administrator, and subject to the following requirements:

(1) Application for relief must be submitted to the Designated Officer in writing prior to the earliest date in which the applying manufacturer would be in violation of § 94.1103. The manufacturer must submit evidence showing that the requirements for approval have been met.

(2) The conditions causing the impending violation must not be substantially the fault of the applying manufacturer.

(3) The conditions causing the impending violation must be such that the applying manufacturer will experience serious economic hardship if relief is not granted.

(4) The applying manufacturer must demonstrate that no other allowances under this part will be available to avoid the impending violation.

(5) Any relief may not exceed one year beyond the date relief is granted.

(6) The Administrator may impose other conditions on the granting of relief including provisions to recover the lost environmental benefit.

§ 94.210 Amending the application and certificate of conformity.

(a) The manufacturer shall notify the Administrator when changes to information required to be described in the application for certification are to be made to a product line covered by a certificate of conformity. This notification shall include a request to amend the application or the existing certificate of conformity. Except as provided in paragraph (e) of this section, no manufacturer shall make said changes or produce said engines prior to receiving approval from the Administrator.

(b) A manufacturer's request to amend the application or the existing certificate of conformity shall include the following information:

(1) A full description of the change to be made in production, or of the engines to be added;

(2) Engineering evaluations or data showing that the engines as modified or added will comply with all applicable emission standards; and

(3) A determination whether the manufacturer's original test fleet selection is still appropriate, and if the original test fleet selection is determined not to be appropriate, test fleet selection(s) representing the engines changed or added which would have been required if the engines had been included in the original application for certification.

(c) The Administrator may require the manufacturer to perform tests on the engine representing the engine to be added or changed.

(d)(1) Based on the description of the amendment and data derived from such testing as the Administrator may require or conduct, the Administrator will determine whether the change or addition would still be covered by the certificate of conformity then in effect.

(2) If the Administrator determines that the change or new engine(s) meets the requirements of this part and the Act, the appropriate certificate of conformity shall be amended.

(3) If the Administrator determines that the changed engine(s) does not meet the requirements of this part and the Act, the certificate of conformity will not be amended. The Administrator shall provide a written explanation to the manufacturer of the decision not to amend the certificate. The manufacturer may request a hearing on a denial.

(e) A manufacturer may make changes in or additions to production engines concurrently with the notification to the Administrator, as required by paragraph (a) of this section, if the manufacturer complies with the following requirements:

(1) In addition to the information required in paragraph (b) of this section, the manufacturer shall supply supporting documentation, test data, and engineering evaluations as appropriate to demonstrate that all

affected engines will still meet applicable emission standards.

(2) If, after a review, the Administrator determines additional testing is required, the manufacturer shall provide the required test data within 30 days or cease production of the affected engines.

(3) If the Administrator determines that the affected engines do not meet applicable requirements, the Administrator will notify the manufacturer to cease production of the affected engines and to recall and correct at no expense to the owner all affected engines previously produced.

(4) Election to produce engines under this paragraph (e) will be deemed to be a consent to recall all engines that the Administrator determines do not meet applicable standards and to cause such nonconformity to be remedied at no expense to the owner.

§ 94.211 Emission-related maintenance instructions for purchasers.

(a) The manufacturer shall furnish or cause to be furnished to the ultimate purchaser of each new engine, subject to the standards prescribed in § 94.8, written instructions for the proper maintenance and use of the engine as are reasonable and necessary to assure the proper functioning of the emissions control system, consistent with the applicable provisions of paragraph (b) of this section.

(1) The maintenance and use instructions required by this section shall be clear and easily understandable.

(2) The maintenance instructions required by this section shall contain a general description of the documentation that would demonstrate for warranty purposes that the ultimate purchaser or any subsequent owner had complied with the instructions.

(b)(1) The manufacturer must provide in boldface type on the first page of the written maintenance instructions notice that maintenance, replacement, or repair of the emission control devices and systems may be performed by any engine repair establishment or individual.

(2) The instructions under paragraph (b)(1) of this section will not include any condition on the ultimate purchaser's or owner's using, in connection with such engine, any component or service (other than a component or service provided without charge under the terms of the purchase agreement) which is identified by brand, trade, or corporate name. Such instructions also will not directly or indirectly distinguish between service performed by any other service establishments with which such manufacturer has a commercial relationship and service performed by independent vessel or engine repair facilities with which such manufacturer has no commercial relationship.

(3) The prohibition of paragraph (b)(2) of this section may be waived by the Administrator if:

(i) The manufacturer demonstrates to the Administrator's satisfaction that the engine will function properly only if the component or service so identified is used in connection with such engine; and

(ii) The Administrator finds that such a waiver is in the public interest.

(c) The manufacturer shall provide to the Administrator, no later than the time of the submission required by § 94.203, a copy of the emission-related maintenance instructions that the manufacturer proposes to supply to the ultimate purchaser or owner in accordance with this section. The Administrator will review such instructions to determine whether they are reasonable and necessary to ensure the proper functioning of the engine's emission control systems. If the Administrator determines that such instructions are not reasonable and necessary to ensure the proper functioning of the emission control systems, he/she may disapprove the application for certification or may require that the manufacturer modify the instructions.

(d) Any revision to the maintenance instructions which will affect emissions shall be supplied to the Administrator at least 30 days before being supplied to the ultimate purchaser or owner unless the Administrator consents to a lesser period of time, and is subject to the provisions of § 94.210.

(e) This paragraph (e) specifies emission-related scheduled maintenance for purposes of obtaining durability data for marine engines. The maintenance intervals specified in this paragraph are minimum intervals.

(1) All emission-related scheduled maintenance for purposes of obtaining durability data must occur at the same or longer hours of use intervals as those specified in the manufacturer's maintenance instructions furnished to the ultimate purchaser of the engine under paragraph (a) of this section. This maintenance schedule may be updated as necessary throughout the testing of the engine, provided that no maintenance operation is deleted from the maintenance schedule after the operation has been performed on the test equipment or engine.

(2) Any emission-related maintenance which is performed on equipment, engines, subsystems, or components must be technologically necessary to ensure in-use compliance with the emission standards. The manufacturer must submit data which demonstrate to the Administrator that all of the emission-related scheduled maintenance which is to be performed is technologically necessary. Scheduled maintenance must be approved by the Administrator prior to being performed or being included in the emission-related maintenance instructions provided to the purchasers under paragraph (a) of this section.

(i) The Administrator may require longer maintenance intervals than those listed in paragraphs (e)(3) and (e)(4) of this section where the listed intervals are not technologically necessary.

(ii) The Administrator may allow manufacturers to specify shorter maintenance intervals than those listed in paragraphs (e)(3) and (e)(4) of this section where technologically necessary for Category 2 engines.

(3) The adjustment, cleaning, repair, or replacement of items listed in paragraphs (e)(3)(i) through (e)(3)(iii) of this section shall occur at 1,500 hours of use and at 1,500-hour intervals thereafter.

(i) Exhaust gas recirculation system-related filters and coolers.

(ii) Positive crankcase ventilation valve.

(iii) Fuel injector tips (cleaning only).

(4) The adjustment, cleaning and repair of items in paragraphs (e)(4)(i) through (e)(4)(vii) of this section shall occur at 3,000 hours of use and at 3,000-hour intervals thereafter for engines with per-cylinder displacement less than 1.2 liters, or at 4,500-hour intervals thereafter for engines with per-cylinder displacement greater than or equal to 1.2 liters.

(i) Fuel injectors.

(ii) Turbocharger.

(iii) Electronic engine control unit and its associated sensors and actuators.

(iv) Particulate trap or trap-oxidizer system (including related components).

(v) Exhaust gas recirculation system (including all related control valves and tubing), except as otherwise provided in paragraph (e)(3)(i) of this section.

(vi) Catalytic convertor.

(vii) Any other add-on emission-related component (*i.e.*, a component whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emission control and whose function is not integral to the design and performance of the engine).

(f) Scheduled maintenance not related to emissions which is reasonable and technologically necessary (*e.g.*, oil change, oil filter change, fuel filter change, air filter change, cooling system

maintenance, adjustment of idle speed, governor, engine bolt torque, valve lash, injector lash, timing, lubrication of the exhaust manifold heat control valve, *etc.*) may be performed on durability engines at the least frequent intervals recommended by the manufacturer to the ultimate purchaser, (*e.g.*, not the intervals recommended for severe service).

(g) Adjustment of engine idle speed on emission data engines may be performed once before the low-hour emission test point. Any other engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on emission data vehicles shall be performed only with advance approval of the Administrator.

(h) Equipment, instruments, or tools may not be used to identify malfunctioning, maladjusted, or defective engine components unless the same or equivalent equipment, instruments, or tools will be available to dealerships and other service outlets and are:

(1) Used in conjunction with scheduled maintenance on such components; or

(2) Used subsequent to the identification of an engine malfunction, as provided in paragraph (e) of this section for emission data engines; or

(3) Specifically authorized by the Administrator.

(i) All test data, maintenance reports, and required engineering reports shall be compiled and provided to the Administrator in accordance with § 94.215.

(j)(1) The components listed in paragraphs (j)(1)(i) through (j)(1)(vi) of this section are defined as critical emission-related components.

(i) Catalytic convertor.

(ii) Electronic engine control unit and its associated sensors and actuators.

(iii) Exhaust gas recirculation system (including all related filters, coolers, control valves, and tubing).

(iv) Positive crankcase ventilation valve.

(v) Particulate trap or trap-oxidizer system.

(vi) Any other add-on emission-related component (i.e., a component whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emission control and whose function is not integral to the design and performance of the engine).

(2) All critical emission-related scheduled maintenance must have a reasonable likelihood of being performed in use. The manufacturer must show the reasonable likelihood of such maintenance being performed in-use. Critical emission-related scheduled maintenance items which satisfy one of the conditions defined in paragraphs (j)(2)(i) through (j)(2)(vi) of this section will be accepted as having a reasonable likelihood of being performed in use.

(i) Data are presented which establish for the Administrator a connection between emissions and engine performance such that as emissions increase due to lack of maintenance, vehicle performance will simultaneously deteriorate to a point unacceptable for typical operation.

(ii) Survey data are submitted which adequately demonstrate to the Administrator with an 80 percent confidence level that 80 percent of such engines already have this critical maintenance item performed in-use at the recommended interval(s).

(iii) A clearly displayed visible signal system approved by the Administrator is installed to alert the equipment operator that maintenance is due. A signal bearing the message ''maintenance needed'' or ''check engine,'' or a similar message approved by the Administrator, shall be actuated at the appropriate usage point or by component failure. This signal must be continuous while the engine is in operation and not be easily eliminated without performance of the required maintenance. Resetting the signal shall be a required step in the maintenance operation. The method for resetting the signal system shall be approved by the Administrator. The system must not be designed to deactivate upon the end of the useful life of the engine or thereafter.

(iv) A manufacturer may desire to demonstrate through a survey that a critical maintenance item is likely to be performed without a visible signal on a maintenance item for which there is no prior in-use experience without the signal. To that end, the manufacturer may in a given model year market up to 200 randomly selected engines per critical emission-related maintenance item without such visible signals, and monitor the performance of the critical maintenance item by the owners to show compliance with paragraph (j)(2)(ii) of this section. This option is restricted to two consecutive model years and may not be repeated until any previous survey has been completed. If the critical maintenance involves more than one engine family, the sample will be sales weighted to ensure that it is representative of all the families in question.

(v) The manufacturer provides the maintenance free of charge, and clearly informs the customer that the maintenance is free in the instructions provided under paragraph (a) of this section.

(vi) The manufacturer uses any other method which the Administrator approves as establishing a reasonable likelihood that the critical maintenance will be performed in-use.

(3) Visible signal systems used under paragraph (j)(2)(iii) of this section are considered an element of design of the emission control system. Therefore, disabling, resetting, or otherwise rendering such signals inoperative without also performing the indicated maintenance procedure is a prohibited act.

§ 94.212 Labeling.

(a) *General requirements.* (1) Each new engine covered by a certificate of conformity under § 94.208 shall be labeled by the manufacturer in the manner described in this paragraph (b) of this section at the time of manufacture.

(2) Each new marine engine modified from a base engine by post-manufacture marinizers in accordance with the provisions of § 94.209 (b) and covered by a certificate of conformity under § 94.208 shall be labeled by the PMM in the manner described in paragraph (b) of this section.

(b) *Engine labels.* Engine labels meeting the specifications of this section shall be applied to every engine by the manufacturer at the point of original manufacture. Engine labels shall be permanent and legible and shall be affixed to the engine in a position in which it will be readily visible after installation of the engine in the vessel. The label shall be attached to an engine part necessary for normal operation and not normally requiring replacement during the useful life of the engine. The label shall be affixed by the manufacturer in such manner that it cannot be removed without destroying or defacing the label. The label shall not be affixed to any equipment which is easily detached from such engine. The label may be not be made up of more than one piece without the advance approval of the Administrator. The label shall contain the following information lettered in the English language in block letters and numerals, which shall be of a color that contrasts with the background of the label:

(1) The label heading: Marine Engine Emission Control Information.

(2) Full corporate name and trademark of the manufacturer.

(3) The model year.

(4) The per-cylinder displacement of the engine.

(5) Engine family and configuration identification.

(6) A prominent unconditional statement of compliance with U.S. Environmental Protection Agency regulations which apply to marine engines designated by the parameters of paragraphs 5(b)(2)(v)(A) through (E) of this section.

(7) The useful life of the engine.

(8) The standards and/or FELs to which the engine was certified.

(9) Engine tune-up specifications and adjustments, as recommended by the manufacturer in accordance with the applicable emission standards, including but not limited to idle speeds(s), injection timing, valve lash (as applicable), as well as other parameters deemed necessary by the manufacturer.

(10) The application for which the engine family is certified. (For example: constant-speed auxiliary, variable-speed propulsion engines used with fixed-pitch propellers, etc.)

(c) The provisions of this section shall not prevent a manufacturer from also providing on the label any other information that such manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of the vessel or engine.

(d) Engines certified under the voluntary standards described in § 94.8(f) to be designated as Blue Sky Series engines must contain the statement on the label: ''Blue Sky Series''.

(e) If an engine can be modified to operate on residual fuel, but has not been certified to meet the standards on such a fuel, it must contain the statement on the label: ''THIS ENGINE IS CERTIFIED FOR OPERATION ONLY WITH DISTILLATE DIESEL FUEL. MODIFYING THE ENGINE TO OPERATE ON RESIDUAL FUEL MAY BE A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTIES.'' The Administrator may approve alternate language.

§ 94.213 Submission of engine identification numbers.

(a) Upon request of the Administrator, the manufacturer of any engine covered by a certificate of conformity shall, within 30 days of receipt of such request, identify by engine identification number, the engines covered by the certificate of conformity.

(b) The manufacturer of any engines covered by a certificate of conformity shall provide to the Administrator, within 60 days of the issuance of a certificate of conformity, an explanation of the elements in any engine identification coding system in sufficient detail to enable the Administrator to identify those engines which are covered by a certificate of conformity.

§ 94.214 Production engines.

Any manufacturer obtaining certification under this part shall supply to the Administrator, upon his/her request, a reasonable number of production engines, as specified by the Administrator. The engines shall be representative of the engines, emission control systems, and fuel systems offered and typical of production engines available for sale or use under the certificate. These engines shall be supplied for testing at such time and place and for such reasonable periods as the Administrator may require.

§ 94.215 Maintenance of records; submittal of information; right of entry.

(a) Any manufacturer subject to any of the standards or procedures prescribed in this subpart shall establish, maintain and retain the following adequately organized and indexed records:

(1) General records. The records required to be maintained by this paragraph (a) shall consist of:

(i) Identification and description of all certification engines for which testing is required under this subpart.

(ii) A description of all emission control systems which are installed on or incorporated in each certification engine.

(iii) A description of all procedures used to test each such certification engine.

(iv) A copy of all applications for certification, filed with the Administrator.

(2) Individual records. (i) A brief history of each engine used for certification under this subpart including:

(A) In the case where a current production engine is modified for use as a certification engine, a description of the process by which the engine was selected and of the modifications made. In the case where the certification engine is not derived from a current production engine, a general description of the buildup of the engine (*e.g.*, whether experimental heads were cast and machined according to supplied drawings). In the cases in the previous two sentences, a description of the origin and selection process for fuel system components, ignition system components (as applicable), intake air pressurization and cooling system components, cylinders, pistons and piston rings, exhaust smoke control system components, and exhaust aftertreatment devices as applicable, shall be included. The required descriptions shall specify the steps taken to assure that the certification engine, with respect to its engine, drivetrain, fuel system, emission control system components, exhaust aftertreatment devices, or any other devices or components as applicable, that can reasonably be expected to influence exhaust emissions will be representative of production engines and that either: all components and/or engine, construction processes, component inspection and selection techniques, and assembly techniques employed in constructing such engines are reasonably likely to be implemented for production engines; or that they are as close as practicable to planned construction and assembly process.

(B) A complete record of all emission tests performed (except tests performed by EPA directly), including test results, the date and purpose of each test, and the number of hours accumulated on the engine.

(C) A record and description of all maintenance and other servicing performed, giving the date of the maintenance or service and the reason for it.

(D) A record and description of each test performed to diagnose engine or emission control system performance, giving the date and time of the test and the reason for it.

(E) A brief description of any significant events affecting the engine during the period covered by the history and not described by an entry under one of the previous headings, including such extraordinary events as accidents involving the engine or dynamometer runaway.

(ii) Each such history shall be started on the date that the first of any of the selection or buildup activities in paragraph (a)(2)(i)(A) of this section occurred with respect to the certification engine and shall be kept in a designated location.

(3) All records, other than routine emission test records, required to be maintained under this subpart shall be retained by the manufacturer for a period of 8 years after issuance of all certificates of conformity to which they relate. Routine emission test records shall be retained by the manufacturer for a period of one (1) year after issuance of all certificates of conformity to which they relate. Records may be retained as hard copy or reduced to computer disks, etc., depending on the record retention procedures of the manufacturer: *Provided*, that in every case all the information contained in the hard copy shall be retained.

(4) Nothing in this section limits the Administrator's discretion in requiring the manufacturer to retain additional

records or submit information not specifically required by this section.

(5) Pursuant to a request made by the Administrator, the manufacturer shall submit to him/her the information that is required to be retained.

(6) EPA may void a certificate of conformity *ab initio* for an engine family for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request.

(b) The manufacturer of engines subject to any of the standards prescribed in this part shall submit to the Administrator, at the time of issuance by the manufacturer, copies of all instructions or explanations regarding the use, repair, adjustment, maintenance, or testing of such engine, relevant to the control of crankcase, or exhaust emissions issued by the manufacturer, for use by other manufacturers, assembly plants, distributors, dealers, owners and operators. Any material not translated into the English language need not be submitted unless specifically requested by the Administrator.

(c) Any manufacturer participating in averaging, banking and trading program of subpart D of this part must comply with the maintenance of records requirements of § 94.308.

(d)(1) Any manufacturer who has applied for certification of a new engine subject to certification testing under this subpart shall admit or cause to be admitted any EPA Enforcement Officer during operating hours on presentation of credentials to any of the following:

(i) Any facility where any such tests or any procedures or activities connected with such test are or were performed;

(ii) Any facility where any engine which is being tested (or was tested, or is to be tested) is present;

(iii) Any facility where any construction process or assembly process used in the modification or buildup of such an engine into a certification engine is taking place or has taken place; or

(iv) Any facility where any record or other document relating to any of the activities listed in this paragraph (d)(1).

(2) Upon admission to any facility referred to in paragraph (d)(1) of this section, any EPA Enforcement Officer shall be allowed:

(i) To inspect and monitor any part or aspect of such procedures, activities and testing facilities including, but not limited to, monitoring engine preconditioning, emissions tests, service accumulation, maintenance, and engine storage procedures, and to verify correlation or calibration of test equipment;

(ii) To inspect and make copies of any such records, designs, or other documents, including those records specified in Subpart D of this part; and

(iii) To inspect and/or photograph any part or aspect of any such certification engine and any components to be used in the construction thereof.

(3) In order to allow the Administrator to determine whether or not production engines, conform to the conditions upon which a certificate of conformity has been issued, or conform in all material respects to the design specifications applicable to those engines, as described in the application for certification for which a certificate of conformity has been issued, any manufacturer shall admit any EPA Enforcement Officer on presentation of credentials to:

(i) Any facility where any document, design or procedure relating to the translation of the design and construction of engines and emission related components described in the application for certification or used for certification testing into production engines is located or carried on;

(ii) Any facility where any engines to be introduced into commerce are manufactured; and

(iii) Any facility where records specified this section are located.

(4) On admission to any such facility referred to in paragraph (d)(3) of this section, any EPA Enforcement Officer shall be allowed:

(i) To inspect and monitor any aspects of such manufacture and other procedures;

(ii) To inspect and make copies of any such records, documents or designs;

(iii) To inspect and photograph any part or aspect of any such engine(s) and any component used in the assembly thereof that are reasonably related to the purpose of his/her entry; and

(iv) To inspect and make copies of any records and documents specified in this section.

(5) Any EPA Enforcement Officer shall be furnished by those in charge of a facility being inspected with such reasonable assistance as he/she may request to help him/her discharge any function listed in this part. Each applicant for or recipient of certification is required to cause those in charge of a facility operated for its benefit to furnish such reasonable assistance without charge to EPA whether or not the applicant controls the facility.

(6) The duty to admit or cause to be admitted any EPA Enforcement Officer applies to any facility involved in the manufacturing or assembling of engines, whether or not the manufacturer owns or controls the facility in question and applies both to domestic and to foreign manufacturers and facilities. EPA will not attempt to make any inspections which it has been informed that local law forbids. However, if local law makes it impossible to do what is necessary to insure the accuracy of data generated at a facility, no informed judgment that an engine is certifiable or is covered by a certificate can properly be based on those data. It is the responsibility of the manufacturer to locate its testing and manufacturing facilities in jurisdictions where this situation will not arise.

(7) For purposes of this section:

(i) ''Presentation of credentials'' shall mean display of the document designating a person as an EPA Enforcement Officer.

(ii) Where component or engine storage areas or facilities are concerned, ''operating hours'' shall mean all times during which personnel other than custodial personnel are at work in the vicinity of the area or facility and have access to it.

(iii) Where facilities or areas other than those covered by paragraph (d)(7)(ii) of this section are concerned, ''operating hours'' shall mean all times during which an assembly line is in operation or all times during which testing, maintenance, service accumulation, production or compilation of records, or any other procedure or activity related to certification testing, to translation of designs from the test stage to the production stage, or to engine manufacture, or assembly is being carried out in a facility.

(iv) ''Reasonable assistance'' includes, but is not limited to, clerical, copying, interpretation and translation services, the making available on request of personnel of the facility being inspected during their working hours to inform the EPA Enforcement Officer of how the facility operates and to answer his questions, and the performance on request of emissions tests on any engine which is being, has been, or will be used for certification testing. Such tests shall be nondestructive, but may require appropriate service accumulation. A manufacturer may be compelled to cause the personal appearance of any employee at such a facility before an EPA Enforcement Officer by written request for his appearance, signed by the Assistant Administrator for Air and Radiation or the Assistant Administrator for Enforcement and Compliance Assurance, served on the manufacturer. Any such employee who has been instructed by the manufacturer to appear will be entitled to be

accompanied, represented and advised by counsel.

(v) Any entry without 24 hour prior written or oral notification to the affected manufacturer shall be authorized in writing by the Assistant Administrator for Air and Radiation or the Assistant Administrator for Enforcement and Compliance Assurance.

(8) EPA may void a certificate of conformity *ab initio* for engines introduced into commerce if the manufacturer (or contractor for the manufacturer, if applicable) fails to comply with any provision of this section.

§ 94.216 Hearing procedures.

(a)(1) After granting a request for a hearing under § 94.210 or § 94.208, the Administrator shall designate a Presiding Officer for the hearing.

(2) The hearing shall be held as soon as practicable at a time and place fixed by the Administrator or by the Presiding Officer.

(3) In the case of any hearing requested pursuant to § 94.208, the Administrator may in his/her discretion direct that all argument and presentation of evidence be concluded within such fixed period not less than 30 days as he/she may establish from the date that the first written offer of a hearing is made to the manufacturer. To expedite proceedings, the Administrator may direct that the decision of the Presiding Officer (who may, but need not be the Administrator) shall be the final EPA decision.

(b)(1) Upon his/her appointment pursuant to paragraph (a) of this section, the Presiding Officer will establish a hearing file. The file shall consist of the notice issued by the Administrator under § 94.210 or § 94.208 together with any accompanying material, the request for a hearing and the supporting data submitted therewith, and all documents relating to the request for certification and all documents submitted therewith, and correspondence and other data material to the hearing.

(2) The hearing file will be available for inspection by the applicant at the office of the Presiding Officer.

(c) An applicant may appear in person, or may be represented by counsel or by any other duly authorized representative.

(d)(1) The Presiding Officer, upon the request of any party, or in his/her discretion, may arrange for a prehearing conference at a time and place specified by him/her to consider the following:

(i) Simplification of the issues;

(ii) Stipulations, admissions of fact, and the introduction of documents;

(iii) Limitation of the number of expert witnesses;

(iv) Possibility of agreement disposing of all or any of the issues in dispute;

(v) Such other matters as may aid in the disposition of the hearing, including such additional tests as may be agreed upon by the parties.

(2) The results of the conference shall be reduced to writing by the Presiding Officer and made part of the record.

(e)(1) Hearings shall be conducted by the Presiding Officer in an informal but orderly and expeditious manner. The parties may offer oral or written evidence, subject to the exclusion by the Presiding Officer of irrelevant, immaterial and repetitious evidence.

(2) Witnesses will not be required to testify under oath. However, the Presiding Officer shall call to the attention of witnesses that their statements may be subject to the provisions of 18 U.S.C. 1001 which imposes penalties for knowingly making false statements or representations, or using false documents in any matter within the jurisdiction of any department or agency of the United States.

(3) Any witness may be examined or cross-examined by the Presiding Officer, the parties, or their representatives.

(4) Hearings shall be reported verbatim. Copies of transcripts of proceedings may be purchased by the applicant from the reporter.

(5) All written statements, charts, tabulations, and similar data offered in evidence at the hearings shall, upon a showing satisfactory to the Presiding Officer of their authenticity, relevancy, and materiality, be received in evidence and shall constitute a part of the record.

(6) Oral argument may be permitted in the discretion of the Presiding Officer and shall be reported as part of the record unless otherwise ordered by him/her.

(f)(1) The Presiding Officer shall make an initial decision which shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the record. The findings, conclusions, and written decision shall be provided to the parties and made a part of the record. The initial decision shall become the decision of the Administrator without further proceedings unless there is an appeal to the Administrator or motion for review by the Administrator within 30 days of the date the initial decision was filed.

(2) On appeal from or review of the initial decision, the Administrator shall have all the powers which he/she would have in making the initial decision including the discretion to require or allow briefs, oral argument, the taking of additional evidence or the remanding to the Presiding Officer for additional proceedings. The decision by the Administrator shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the appeal or considered in the review.

§ 94.217 Emission data engine selection.

(a) The manufacturer must select for testing, from each engine family, the engine configuration which is expected to be worst-case for exhaust emission compliance on in-use engines, considering all exhaust emission constituents and the range of installation options available to vessel builders. The engines selected for testing are collectively described as the test fleet.

(b) Each engine in the test fleet must be constructed to be representative of production engines.

(c) After review of the manufacturer's test fleet, the Administrator may select from the available fleet one additional test engine from each engine family.

(d) Each engine selected shall be tested according to the provisions of Subpart B of this part.

(e) In lieu of testing an emission data engine selected under paragraph (a) of this section and submitting the resulting data, a manufacturer may, with Administrator approval, use emission data on a similar engine for which certification has previously been obtained or for which all applicable data required under this subpart have previously been submitted. These data must be submitted in the application for certification.

§ 94.218 Deterioration factor determination.

Manufacturers shall determine exhaust emission deterioration factors using good engineering judgement according to the provisions of this section. Every deterioration factor must be, in the Administrator's judgment, consistent with emissions increases observed in-use based on emission testing of similar engines. Deterioration factors that predict emission increases over the useful life of an engine that are significantly less than the emission increases over the useful life observed from in-use testing of similar engines shall not be used.

(a) A separate exhaust emission deterioration factor shall be established for each engine family and for each emission constituent applicable to that family.

(b) *Calculation procedures.* (1) *For engines not utilizing aftertreatment technology (e.g., catalyst).* For each applicable emission constituent, an additive deterioration factor shall be used; that is, a deterioration factor that when added to the low mileage emission rate equals the emission rate at the end of useful life. However, if the deterioration factor supplied by the manufacturer is less than zero, it shall be zero for the purposes of this section.

(2) *For engines utilizing aftertreatment technology (e.g., catalyst).* For each applicable emission constituent, a multiplicative deterioration factor shall be used; that is deterioration factors that when multiplied by the low mileage emission rate equal the emission rate at the end of useful life. However, if the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this section.

(c) *Rounding.* (1) In the case of a multiplicative exhaust emission deterioration factor, the factor shall be rounded to three places to the right of the decimal point in accordance with ASTM E 29–93a (incorporated by reference at § 94.5).

(2) In the case of an additive exhaust emission deterioration factor, the factor shall be established to a minimum of two places to the right of the decimal in accordance with ASTM E 29–93a (incorporated by reference at § 94.5).

(d)(1) Except as allowed by paragraph (d)(2) of this section, the manufacturer shall determine the deterioration factors based on service accumulation and related testing, according to the manufacturer's procedures, and the provisions of §§ 94.219 and 94.220. The manufacturer shall determine the form and extent of this service accumulation, consistent with good engineering practice, and shall describe this process in the application for certification.

(2) *Alternatives to service accumulation and testing for the determination of a deterioration factor.* A written explanation of the appropriateness of using an alternative must be included in the application for certification.

(i) *Carryover and carryacross of durability emission data.* In lieu of testing an emission data or durability data engine selected under § 94.217 or § 94.219, and submitting the resulting data, a manufacturer may, with Administrator approval, use exhaust emission deterioration data on a similar engine for which certification to the same standard has previously been obtained or for which all applicable data required under this subpart have previously been submitted. These data must be submitted in the application for certification.

(ii) *Use of non-marine deterioration data.* In the case where a manufacturer produces a certified motor vehicle engine, locomotive engine, or other nonroad engine that is similar to the marine engine to be certified, deterioration data from the non-marine engine may be applied to the marine engine. This application of deterioration data from such an engine to a marine engine is subject to Administrator approval, and the determination of whether the engines are similar shall be based on good engineering judgment.

(iii) *Engineering analysis for established technologies.* In the case where an engine family uses technology which is well established, an analysis based on good engineering practices may be used in lieu of testing to determine a deterioration factor for that engine family. Engines using exhaust gas recirculation or aftertreatment are excluded from this provision. The manufacturer shall provide a written statement to the Administrator that all data, analyses, test procedures, evaluations, and other documents, on which the deterioration factor is based, are available to the Administrator upon request.

§ 94.219 Durability data engine selection.

(a) The manufacturer shall select for durability testing, from each engine family, the engine configuration which is expected to generate the highest level of exhaust emission deterioration on engines in use, considering all exhaust emission constituents and the range of installation options available to vessel builders. The manufacturer shall use good engineering judgment in making this selection.

(b) Carryover data satisfying the provisions of § 94.220 may also be used in lieu of testing the configuration selected in paragraph (a) of this section.

(c) Durability data engines shall be built from subsystems and components that are representative of actual production engines.

§ 94.220 Service accumulation.

(a) Each test emission data engine in the test fleet may be operated with all emission control systems operating properly for a period, up to 125 hours of operation, that is sufficient to stabilize emissions.

(b) Durability data engines shall accumulate service in a manner which will represent the emission levels from in-use engines over their full useful life, consistent with good engineering judgement.

(1) Components may be removed from the engine and aged separately.

(2) End of useful life emission levels and deterioration factors may be projected from durability data engines which have completed less than full useful life service accumulation, provided that the amount of service accumulation completed and projection procedures are determined using good engineering judgement.

(c) No maintenance, other than recommended lubrication and filter changes or maintenance otherwise allowed by this part, may be performed during service accumulation without the Administrator's approval.

(d) The manufacturer must maintain, and provide to the Administrator if requested, records stating the rationale for selecting the service accumulation period and records describing the method used to accumulate service hours on the test engine(s).

§ 94.221 Application of good engineering judgment.

(a) The manufacturer shall exercise good engineering judgment in making all decisions called for under this part, including but not limited to selections, categorizations, determinations, and applications of the requirements of the part.

(b) Upon written request by the Administrator, the manufacturer shall provide within 15 working days (or such longer period as may be allowed by the Administrator) a written description of the engineering judgment in question.

(c) The Administrator may reject any such decision by a manufacturer if it is not based on good engineering judgment or is otherwise inconsistent with the requirements of this part.

(d) If the Administrator rejects a decision by a manufacturer with respect to the exercise of good engineering judgment, the following provisions shall apply:

(1) If the Administrator determines that incorrect information was deliberately used in the decision process, that important information was deliberately overlooked, that the decision was not made in good faith, or that the decision was not made with a rational basis, the Administrator may suspend or void *ab initio* a certificate of conformity.

(2) If the Administrator determines that the manufacturer's decision is not covered by the provisions of paragraph (d) (1) of this section, but that a different decision would reflect a better exercise of good engineering judgment, then the Administrator will notify the

manufacturer of this concern and the basis of the concern.

(i) The manufacturer shall have at least 30 days to respond to this notice. The Administrator may extend this response period upon request from the manufacturer if it is necessary to generate additional data for the manufacturer's response.

(ii) The Administrator shall make the final ruling after considering the information provided by the manufacturer during the response period. If the Administrator determines that the manufacturer's decision was not made using good engineering judgment, he/she may reject that decision and apply the new ruling to future corresponding decisions as soon as practicable.

(e) The Administrator shall notify the manufacturer in writing regarding any decision reached under paragraph (d)(1) or (2) of this section. The Administrator shall include in this notification the basis for reaching the determination.

(f) Within 30 working days following receipt of notification of the Administrator's determinations made under paragraph (d) of this section, the manufacturer may request a hearing on those determinations. The request shall be in writing, signed by an authorized representative of the manufacturer, and shall include a statement specifying the manufacturer's objections to the Administrator's determinations, and data or other analysis in support of such objections. If, after review of the request and supporting data or analysis, the Administrator finds that the request raises a substantial factual issue, he/she shall provide the manufacturer a hearing in accordance with § 94.216 with respect to such issue.

§ 94.222 Certification of engines on imported vessels.

For marine engines subject to the requirements of this part that are installed on imported vessels, the Administrator may specify alternate certification provisions as necessary.

Subpart D Certification Averaging, Banking, and Trading Provisions

§ 94.301 Applicability.

Marine engine families subject to the standards of Subpart A of this part are eligible to participate in the certification averaging, banking, and trading program described in this subpart.

The provisions of this subpart apply to manufacturers of new engines that are subject to the emission standards of § 94.8.

§ 94.302 Definitions.

The definitions of Subpart A of this part apply to this subpart. The following definitions also apply:

Applicable standard means a standard that would have otherwise been applicable had the engine not been certified under this subpart to an FEL different than that standard.

Broker means any entity that facilitates a trade between a buyer and seller.

Buyer means the entity that receives credits as a result of trade.

Reserved credits means credits that have been generated but have not yet been reviewed by EPA or used to demonstrate compliance under the averaging provisions of this subpart.

Seller means the entity that provides credits during a trade.

§ 94.303 General provisions.

(a) Participation in the averaging, banking, and trading program is voluntary. A manufacturer may choose to involve some or all of its engine families in any or all aspects of the program.

(b) An engine family is eligible to participate in the certification averaging, banking, and trading program for $THC+NO_X$ and PM emissions only if it is subject to regulation under this part with certain exceptions specified in paragraph (c) of this section. No averaging, banking, and trading program is available for meeting the CO standards of this part.

(c) Engines may not participate in the certification averaging, banking, and trading program if they are exported. Only engines certified under this part are eligible for generation or use of credits in this certification averaging, banking, and trading program. Engines certified to the Blue Sky provisions of § 94.8(f) are not eligible for inclusion in this certification averaging, banking, and trading program.

(d) Averaging involves the generation of credits by a manufacturer for use by that same manufacturer in the same calendar year. A manufacturer may use averaging during certification to offset an emission exceedance of an engine family caused by an FEL above the applicable emission standard, subject to the provisions of this subpart.

(e) Banking involves the generation of credits by a manufacturer in a given calendar year for use in a subsequent model year. A manufacturer may bank actual credits only after the end of the calendar year and after EPA has reviewed the manufacturer's end-of-year reports. During the calendar year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging in the end-of-year report. Credits declared for banking from the previous calendar year that have not been reviewed by EPA may be used in averaging or trading transactions. However, such credits may be revoked at a later time following EPA review of the end-of-year report or any subsequent audit actions.

(f) Trading involves the sale of banked credits for use in certification of new engines under this part. Only banked credits may be traded; reserved credits may not be traded.

§ 94.304 Compliance requirements.

(a) Manufacturers wishing to participate in certification averaging, banking and trading programs shall select a FEL for each engine family they wish to include. The level of the FEL shall be selected by the manufacturer, subject to the upper limits described in paragraph (m) of this section. An engine family certified to an FEL is subject to all provisions specified in this part, except that the applicable FEL replaces the applicable $THC+NO_X$ and PM emission standard for the family participating in the averaging, banking, and trading program.

(b) A manufacturer may certify one or more engine families at FELs above or below the applicable emission standard, provided the summation of the manufacturer's projected balance of all credit transactions in a given calendar year is greater than or equal to zero, as calculated for each family under § 94.305 and reported under § 94.309.

(c) Manufacturers certifying engine families with FELs exceeding the applicable emission standard shall obtain emission credits in amounts sufficient to address the shortfall. Credits may be obtained from averaging, banking, or trading, subject to the restrictions described in this subpart.

(d) Manufacturers certifying engine families with FELs below the applicable emission standard may generate emission credits to average, bank, or trade, or a combination thereof.

(e) An engine family may not generate credits for one pollutant while also using credits for another pollutant in the same model year.

(f) Credits may only be used for certification; they may not be used to remedy a violation of the FEL determined by production line or in-use testing. Credits may be used to allow subsequent production of engines for an engine family failing production line testing if the manufacturer elects to recertify to a higher FEL.

(g) [Reserved].

(h) If an FEL is changed after initial certification in any given model year, the manufacturer must conduct production line testing to verify that the emission levels are achieved, with one exception: when an FEL is changed immediately after (and because of) a production line testing failure, additional verification testing is not required.

(i) Manufacturers participating in the averaging, banking and trading program must demonstrate compliance with the applicable emission standards at the end of the model year. Manufacturers that have certified engine families to FELs above the applicable emission standards and do not have sufficient emission credits to offset the difference between the emission standard and the FEL for such engine families will be in violation of the conditions of the certificate of conformity for such engine families. The certificates of conformity may be voided *ab initio* for those engine families.

(j) In the event of a negative credit balance resulting from a credit trade, both the buyer(s) and the seller(s) are liable, except in cases involving fraud. Certificates of all engine families participating in a negative trade may be voided *ab initio.*

(1) Where a buyer of credits is not responsible for causing the negative credit balance, the buyer is only liable to supply additional credits equivalent to any amount of invalid credits that the buyer used for its engine family(ies).

(2) Credit holders responsible for the credit shortfall may be subject to the requirements of § 94.309(g)(3).

(k) Credits generated by Category 1 engine families may be used for compliance by Category 1 or Category 2 engine families. Credits generated from Category 1 engine families for use by Category 2 engine families must be discounted by 25 percent. Credits generated by Category 2 engine families may be used for compliance only by Category 2 engine families.

(l) Credit life shall be unlimited.

(m) Upper limits. The FELs for THC+NO_X and PM for new engines certified for participation in this averaging, banking and trading program may not exceed the following values:

(1) For Category 1 engines, the FEL may not exceed the levels contained in Table D–1, which follows:

TABLE D–1.—CATEGORY 1 UPPER LIMITS FOR TIER 2 FAMILY EMISSION LIMITS

Subcategory liters/cylinder	Model year [1]	THC+NO_X FEL g/kW-hr	PM FEL g/kW-hr
Power ≥ 37 kW disp. < 0.9	2005	11.5	1.2
0.9 ≤ disp. < 1.2	2004	11.5	1.2
1.2 ≤ disp. < 2.5	2004	10.5	0.54
2.5 ≤ disp. < 5.0	2007	10.5	0.54

[1] The model years listed indicate the model years for which the specified standards start.

(2) For Category 2 engines, the FEL may not exceed the applicable standard by more than 25 percent.

§ 94.305 Credit generation and use calculation.

(a) For each participating engine family, THC+NO_X and PM emission credits (positive or negative) are to be calculated according to the equation in paragraph (b) of this section and rounded in accordance with ASTM E 29–93a (incorporated by reference at § 94.5), to the nearest one-hundredth of a megagram (Mg). Consistent units are to be used throughout the calculation.

(b) Credits (Mg) for each engine family are calculated as: Emission credits = (Std—FEL) X (UL) X (Production) X (AvgPR) X (LF) X (10^{-6})

Where:

(i) Std = the applicable cycle-weighted marine engine THC+NO_X or PM emission standard in grams per kilowatt-hour.

(ii) FEL = the family emission limit for the engine family in grams per kilowatt-hour. (The FEL may not exceed the limit established in § 94.304(m) for each pollutant.)

(iii) UL = the useful life in hours of operation.

(iv) Production = the number of engines participating in the averaging, banking, and trading program within the given engine family during the calendar year (or the number of engines in the subset of the engine family for which credits are being calculated). Quarterly production projections are used for initial certification. Actual applicable production/sales volumes are used for end-of-year compliance determination.

(v) AvgPR = average power rating of all of the configurations within an engine family, calculated on a sales-weighted basis, in kilowatts.

(vi) LF = the load factor, dependent on whether the engine is intended for propulsion or auxiliary applications, as follows:

(A) 0.69 for propulsion engines,

(B) 0.51 for auxiliary engines.

§ 94.306 Certification.

(a) In the application for certification a manufacturer must:

(1) Declare its intent to include specific engine families in the averaging, banking, and/or trading programs. Separate declarations are required for each pollutant (THC+NO_X and PM).

(2) Declare FELs for each engine family participating in certification averaging, banking, and/or trading.

(i) The FELs must be to the same number of significant digits as the emission standard.

(ii) In no case may the FEL exceed the upper limit prescribed in § 94.304(m).

(3) Conduct and submit detailed calculations of projected emission credits (positive or negative) based on quarterly production projections for each participating family and for each pollutant, using the applicable equation in § 94.305 and the applicable values of the terms in the equation for the specific family.

(i) If the engine family is projected to have negative emission credits, state specifically the source (manufacturer/engine family) of the credits necessary to offset the credit deficit according to quarterly projected production.

(ii) If the engine family is projected to generate credits, state specifically where the quarterly projected credits will be applied (manufacturer/engine family or reserved).

(4) Submit a statement that the engines for which certification is requested will not, to the best of the manufacturer's belief, cause the manufacturer to have a negative credit balance when all credits are calculated for all the manufacturer's engine families participating in the averaging, banking, and trading program.

(b) Based on this information, each manufacturer's certification application must demonstrate:

(1) That at the end of model year production, each engine family has a net emissions credit balance equal to or greater than zero for any pollutant and program for which participation in certification under averaging, banking, and/or trading is being sought. The equation in section § 94.305 shall be used in this calculation for each engine family.

(2) That the manufacturer will obtain sufficient credits to be used to comply with the emission standard for any engine family with an FEL that exceeds the applicable emission standard, or where credits will be applied if the FEL is less than the emission standard. In cases where credits are being obtained, for each engine family involved the manufacturer must identify specifically the source of the credits being used (manufacturer/engine family). All such reports shall include all credits involved in certification averaging, banking, or trading.

(3) That in cases where credits are being generated/supplied, the use of such credits is specifically designated (manufacturer/engine family or reserved). All such reports shall include all credits involved in certification averaging, banking, or trading.

(c) Manufacturers must monitor projected versus actual production throughout the model year to ensure that compliance with emission standards is achieved at the end of the model year.

(d) At the end of the model year, the manufacturer must provide the end-of-year reports required under § 94.309.

(1) Projected credits based on the information supplied in the certification application may be used to obtain a certificate of conformity. However, any such projected credits must be validated based on review of the end of model year reports and may be revoked at a later time based on follow-up audits or any other verification measure deemed appropriate by the Administrator.

(2) Compliance for engine families using averaging, banking, or trading will be determined at the end of the model year. Manufacturers that have certified engine families with credit balances for $THC+NO_X$ and/or PM that do not equal or exceed zero shall be in violation of the conditions of the certificate of conformity for such engine families. The certificate of conformity may be voided *ab initio* for those engine families.

(e) Other conditions of certification.

(1) All certificates issued are conditional upon compliance by the manufacturer with the provisions of this subpart both during and after the calendar year of production.

(2) Failure to comply with all provisions of this subpart will be considered to be a failure to satisfy the conditions upon which the certificate was issued, and the certificate may be deemed void *ab initio*.

(3) The manufacturer bears the burden of establishing to the satisfaction of the Administrator that the conditions upon which the certificate was issued were satisfied or waived.

§ 94.307 Labeling.

For all engines included in the certification averaging, banking, and trading program, the FEL to which the engine is certified must be included on the label required in § 94.212.

§ 94.308 Maintenance of records.

(a) The manufacturer of any engine that is certified under the averaging, banking, and trading program must establish, maintain, and retain the following adequately organized and indexed records for each such engine produced:

(1) EPA engine family and configuration;

(2) Engine identification number;

(3) Engine calendar year and build date;

(4) Rated power;

(5) Purchaser and destination; and

(6) Assembly plant.

(b) The manufacturer of any engine family that is certified under the averaging, banking, and trading program must establish, maintain, and retain the following adequately organized and indexed records for each such family:

(1) Model year and EPA engine family;

(2) Family Emission Limit(s) (FEL);

(3) Rated power for each configuration;

(4) Projected applicable production/sales volume for the calendar year;

(5) Actual applicable production/sales volume for the calendar year; and

(6) Useful life.

(c) Any manufacturer producing an engine family participating in trading of credits must maintain the following records on a quarterly basis for each engine family in the trading program:

(1) The model year and engine family;

(2) The actual quarterly and cumulative applicable production/sales volume;

(3) The values required to calculate credits as given in § 94.305;

(4) The resulting type and number of credits generated/required;

(5) How and where credit surpluses are dispersed; and

(6) How and through what means credit deficits are met.

(d) The manufacturer must retain all records required to be maintained under this section for a period of 8 years from the due date for the end-of-calendar year report. Records may be retained as hard copy or reduced to microfilm, ADP diskettes, and so forth, depending on the manufacturer's record retention procedure; provided, that in every case all information contained in the hard copy is retained.

(e) Nothing in this section limits the Administrator's discretion in requiring the manufacturer to retain additional records or submit information not specifically required by this section.

(f) Pursuant to a request made by the Administrator, the manufacturer must submit to the Administrator the information that the manufacturer is required to retain.

(g) EPA may void *ab initio* a certificate of conformity for an engine family for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request.

§ 94.309 Reports.

(a) Manufacturers must submit the certification information as required under § 94.306, and end-of-year reports each year as part of their participation in certification averaging, banking, and trading programs.

(b) Quarterly reports. All entities involved in credit trades must submit quarterly reports. The reports shall include the source or recipient of the credits, the amount of credits involved plus remaining balances, details regarding the pollutant, and model year as well as the information prescribed in § 94.308(c). Copies of contracts related to credit trading must be included or supplied by the buyer, seller, and broker, as applicable.

(c) End-of-year reports must include the information prescribed in § 94.308(b). The report shall include a calculation of credit balances for each family to show that the summation of the manufacturer's use of credits results in a credit balance equal to or greater than zero. The report shall be consistent in detail with the information submitted under § 94.306 and show how credit surpluses were dispersed and how credit shortfalls were met on a family specific basis. The end-of-year report shall incorporate any information reflected in previous quarterly reports.

(d) The applicable production/sales volume for quarterly and end-of-year reports must be based on the location of either the point of first retail sale by the manufacturer or the point at which the engine is placed into service, whichever occurs first. This is called the final product purchase location.

(e) Each quarterly and end-of-year report submitted shall include a statement certifying to the accuracy and authenticity of the material reported therein.

(f) Requirements for submission. (1) Quarterly reports must be submitted within 90 days of the end of the calendar quarter to the Designated Officer.

(2) End-of-year reports must be submitted within 120 days of the end of the calendar year to the Designated Officer.

(3) Failure by a manufacturer participating in the averaging, banking, or trading program to submit any quarterly or end-of-year reports in the specified time for all engines is a violation of sections 203(a)(1) and 213 of the Clean Air Act for each engine.

(4) A manufacturer generating credits for banking only who fails to submit end-of-year reports in the applicable specified time period (120 days after the end of the calendar year) may not use or trade the credits until such reports are received and reviewed by EPA. Use of projected credits pending EPA review is not permitted in these circumstances.

(g) Reporting errors. (1) Errors discovered by EPA or the manufacturer in the end-of-year report, including errors in credit calculation, may be corrected 180-days subsequent to submission of the end-of-year report. Errors discovered by EPA after 180-days shall be correctable if, as a result of the correction, the manufacturer's credits are reduced. Errors in the manufacturer's favor are not corrected if discovered after the 180-day correction period allowed.

(2) If EPA or the manufacturer determines that a reporting error occurred on an end-of-year report previously submitted to EPA under this section, the manufacturer's credits and credit calculations will be recalculated. Erroneous positive credits will be void. Erroneous negative credit balances may be corrected by EPA.

(3) If EPA review of a manufacturer's end-of-year report indicates a credit shortfall, the manufacturer will be permitted to purchase the necessary credits to bring the credit balance to zero. These credits must be supplied at the ratio of 1.1 credits for each 1.0 credit needed. If sufficient credits are not available to bring the credit balance to zero for the family(ies) involved, EPA may void the certificate(s) for that family(ies) *ab initio*. In addition, all engines within an engine family for which there are insufficient credits will be considered to have violated the conditions of the certificate of conformity and therefore are not covered by that certificate.

(4) If within 180 days of receipt of the manufacturer's end-of-year report, EPA review determines a reporting error in the manufacturer's favor (that is, resulting in an increased credit balance) or if the manufacturer discovers such an error within 180 days of EPA receipt of the end-of-year report, the credits are restored for use by the manufacturer.

§ 94.310 Notice of opportunity for hearing.

Any voiding of the certificate under this subpart will be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with § 94.216 and, if a manufacturer requests such a hearing, will be made only after an initial decision by the Presiding Officer.

Subpart E—Emission-related Defect Reporting Requirements, Voluntary Emission Recall Program

§ 94.401 Applicability.

The requirements of this subpart are applicable to manufacturers of engines subject to the provisions of Subpart A of this part. The requirement to report emission-related defects affecting a given class or category of engines applies for eight years from the end of the year in which such engines were manufactured.

§ 94.402 Definitions.

The definitions of Subpart A of this part apply to this subpart.

§ 94.403 Emission defect information report.

(a) A manufacturer must file a defect information report whenever it determines, in accordance with procedures it established to identify either safety-related or performance defects (or based on other information), that a specific emission-related defect exists in 25 or more Category 1 marine engines, or 10 or more Category 2 marine engines. No report must be filed under this paragraph for any emission-related defect corrected prior to the sale of the affected engines to an ultimate purchaser. (Note: These limits apply to the occurrence of the same defect, and are not constrained by engine family or model year.)

(b) Defect information reports required under paragraph (a) of this section must be submitted not more than 15 working days after the same emission-related defect is found to effect 25 or more Category 1 marine engines, or 10 or more Category 2 marine engines. Information required by paragraph (c) of this section that is either not available within 15 working days or is significantly revised must be submitted as it becomes available.

(c) Except as provided in paragraph (b) of this section, each defect report must contain the following information in substantially the format outlined:

(1) The manufacturer's corporate name.

(2) A description of the defect.

(3) A description of each class or category of engines potentially affected by the defect including make, model, calendar year produced, purchaser and any other information as may be required to identify the engines affected.

(4) For each class or category of engines described in response to paragraph (c)(3) of this section, the following shall also be provided:

(i) The number of engines known or estimated to have the defect and an explanation of the means by which this number was determined.

(ii) The address of the plant(s) at which the potentially defective engines were produced.

(5) An evaluation of the emissions impact of the defect and a description of any operational or performance problems which a defective engine might exhibit.

(6) Available emissions data which relate to the defect.

(7) An indication of any anticipated follow-up by the manufacturer.

§ 94.404 Voluntary emissions recall reporting.

(a) When any manufacturer initiates a voluntary emissions recall campaign involving an engine, the manufacturer shall submit to EPA a report describing the manufacturer's voluntary emissions recall plan as prescribed by this section within 15 working days of the date owner notification was begun. The report shall contain the following:

(1) A description of each class or category of engines recalled including the number of engines to be recalled, the calendar year if applicable, the make, the model, and such other information as may be required to identify the engines recalled.

(2) A description of the specific modifications, alterations, repairs, corrections, adjustments, or other changes to be made to correct the engines affected by the emission-related defect.

(3) A description of the method by which the manufacturer will notify engine owners.

(4) A description of the proper maintenance or use, if any, upon which the manufacturer conditions eligibility for repair under the remedial plan, an explanation of the manufacturer's reasons for imposing any such

condition, and a description of the proof to be required of an engine owner to demonstrate compliance with any such condition.

(5) A description of the procedure to be followed by engine owners to obtain correction of the nonconformity. This shall include designation of the date on or after which the owner can have the nonconformity remedied, the time reasonably necessary to perform the labor to remedy the defect, and the designation of facilities at which the defect can be remedied.

(6) If some or all the nonconforming engines are to be remedied by persons other than authorized warranty agents of the manufacturer, a description of the class of persons other than authorized warranty agents of the manufacturer who will remedy the defect.

(7) A copy of any written notification sent to engine owners.

(8) A description of the system by which the manufacturer will assure that an adequate supply of parts will be available to perform the repair under the remedial plan including the date by which an adequate supply of parts will be available to initiate the repair campaign, the percentage of the total parts requirement of each person who is to perform the repair under the remedial plan to be shipped to initiate the campaign, and the method to be used to assure the supply remains both adequate and responsive to owner demand.

(9) Three copies of all necessary instructions to be sent to those persons who are to perform the repair under the remedial plan.

(10) A description of the impact of the changes on fuel consumption, operation or performance, and safety of each class or category of engines to be recalled.

(11) A sample of any label to be applied to engines which participate in the voluntary recall campaign.

(b) Unless otherwise specified by the Administrator, the manufacturer shall report on the progress of the recall campaign by submitting subsequent reports for six consecutive quarters, or until proven that remedial action has been adequately taken on all affected engines, whichever occurs first, commencing with the quarter after the voluntary emissions recall campaign actually begins. Such reports shall be submitted no later than 25 working days after the close of each calendar quarter. For each class or group of engine subject to the voluntary emissions recall campaign, the quarterly report shall contain the:

(1) Emission recall campaign number, if any, designated by the manufacturer.

(2) Date owner notification was begun, and date completed.

(3) Number of engines involved in the voluntary emissions recall campaign.

(4) Number of engines known or estimated to be affected by the emission-related defect and an explanation of the means by which this number was determined.

(5) Number of engines inspected pursuant to voluntary emission recall plan.

(6) Number of inspected engines found to be affected by the emissions-related defect.

(7) Number of engines actually receiving repair under the remedial plan.

(8) Number of engines determined to be unavailable for inspection or repair under the remedial plan due to exportation, scrappage, or for other reasons (specify).

(9) Number of engines determined to be ineligible for remedial action due to a failure to properly maintain or use such engines.

(10) Three copies of any service bulletins which relate to the defect to be corrected and which have not previously been reported.

(11) Three copies of all communications transmitted to engine owners which relate to the defect to be corrected and which have not previously been submitted.

(c) If the manufacturer determines that any of the information requested in paragraph (b) of this section has changed or was incorrect, revised information and an explanatory note shall be submitted. Answers to paragraphs (b)(5), (6), (7), (8), and (9) of this section shall be cumulative totals.

(d) The manufacturer shall maintain in a form suitable for inspection, such as computer information storage devices or card files, the names and addresses of engine owners:

(1) To whom notification was given;

(2) Who received remedial repair or inspection under the remedial plan; and

(3) Who were determined not to qualify for such remedial action when eligibility is conditioned on proper maintenance or use.

(e) The records described in paragraph (d) of this section shall be made available to the Administrator upon request.

§ 94.405 Alternative report formats.

(a) Any manufacturer may submit a plan for making either of the reports required by §§ 94.403 and 94.404 on computer diskettes, magnetic tape or other machine readable format. The plan shall be accompanied by sufficient technical detail to allow a determination that data requirements of these sections will be met and that the data in such format will be usable by EPA.

(b) Upon approval by the Administrator of the reporting system, the manufacturer may use such system until otherwise notified by the Administrator.

§ 94.406 Reports filing: record retention.

(a) The reports required by §§ 94.403 and 94.404 shall be sent to the Designated Officer.

(b) The information gathered by the manufacturer to compile the reports required by §§ 94.403 and 94.404 shall be retained for not less than 8 years from the date of the manufacture of the engines and shall be made available to duly authorized officials of the EPA upon request.

§ 94.407 Responsibility under other legal provisions preserved.

The filing of any report under the provisions of this subpart shall not affect a manufacturer's responsibility to file reports or applications, obtain approval, or give notice under any provision of law.

§ 94.408 Disclaimer of production warranty applicability.

(a) The act of filing an Emission Defect Information Report pursuant to § 94.403 is inconclusive as to the existence of a defect subject to the warranty provided by section 207(a) of the Act.

(b) A manufacturer may include on each page of its Emission Defect Information Report a disclaimer stating that the filing of a Defect Information Report pursuant to this subpart is not conclusive as to the applicability of the Production Warranty provided by section 207(a) of the Act.

Subpart F—Manufacturer Production Line Testing Programs

§ 94.501 Applicability.

(a) The requirements of this subpart are applicable to manufacturers of engines subject to the provisions of Subpart A of this part.

(b) The provisions of Subpart F of 40 CFR Part 89 (Selective Enforcement Audit) apply to engines subject to the provisions of Subpart A of this part.

§ 94.502 Definitions.

The definitions in Subpart A of this part apply to this subpart.

§ 94.503 General requirements.

(a) Manufacturers shall test production line engines in accordance with sampling procedures specified in § 94.505 and the test procedures specified in § 94.506.

(b) Upon request, the Administrator may also allow manufacturers to conduct alternate production line testing programs, provided the Administrator determines that the alternate production line testing program provides equivalent assurance that the engines that are being produced conform to the provisions of this part. As part of this allowance or for other reasons, the Administrator may waive some or all of the requirements of this subpart.

(c) The requirements of this subpart apply with respect to all applicable standards and FELs of Subpart A of this part, including the supplemental standards of § 94.8(e).

§ 94.504 Right of entry and access.

(a) To allow the Administrator to determine whether a manufacturer is complying with the provisions of this part, one or more EPA enforcement officers may enter during operating hours and upon presentation of credentials any of the following places:

(1) Any facility, including ports of entry, where any engine is to be introduced into commerce or any emission-related component is manufactured, assembled, or stored;

(2) Any facility where any test conducted pursuant to a manufacturer's production line testing program or any procedure or activity connected with such test is or was performed;

(3) Any facility where any test engine is present; and

(4) Any facility where any record required under § 94.509 or other document relating to this subpart is located.

(b) Upon admission to any facility referred to in paragraph (a) of this section, EPA enforcement officers are authorized to perform the following inspection-related activities:

(1) To inspect and monitor any aspect of engine manufacture, assembly, storage, testing and other procedures, and to inspect and monitor the facilities in which these procedures are conducted;

(2) To inspect and monitor any aspect of engine test procedures or activities, including test engine selection, preparation and service accumulation, emission duty cycles, and maintenance and verification of test equipment calibration;

(3) To inspect and make copies of any records or documents related to the assembly, storage, selection, and testing of a engine; and

(4) To inspect and photograph any part or aspect of any engine and any component used in the assembly thereof that is reasonably related to the purpose of the entry.

(c) EPA enforcement officers are authorized to obtain reasonable assistance without cost from those in charge of a facility to help the officers perform any function listed in this subpart and they are authorized to request the manufacturer to make arrangements with those in charge of a facility operated for the manufacturer benefit to furnish reasonable assistance without cost to EPA.

(1) Reasonable assistance includes, but is not limited to, clerical, copying, interpretation and translation services; the making available on an EPA enforcement officer's request of personnel of the facility being inspected during their working hours to inform the EPA enforcement officer of how the facility operates and to answer the officer's questions; and the performance on request of emission tests on any engine which is being, has been, or will be used for production line testing.

(2) By written request, signed by the Assistant Administrator for Air and Radiation or the Assistant Administrator for Enforcement and Compliance Assurance, and served on the manufacturer, a manufacturer may be compelled to cause the personal appearance of any employee at such a facility before an EPA enforcement officer. Any such employee who has been instructed by the manufacturer to appear will be entitled to be accompanied, represented, and advised by counsel.

(d) EPA enforcement officers are authorized to seek a warrant or court order authorizing the EPA enforcement officers to conduct the activities authorized in this section, as appropriate, to execute the functions specified in this section. EPA enforcement officers may proceed *ex parte* to obtain a warrant or court order whether or not the EPA enforcement officers first attempted to seek permission from the manufacturer or the party in charge of the facility(ies) in question to conduct the activities authorized in this section.

(e) A manufacturer is responsible for locating its foreign testing and manufacturing facilities in jurisdictions where local law does not prohibit an EPA enforcement officer(s) from conducting the activities specified in this section. EPA will not attempt to make any inspections which it has been informed local foreign law prohibits.

§ 94.505 Sample selection for testing.

(a) At the start of each model year, the manufacturer will begin to select engines from each engine family for production line testing. Each engine will be selected from the end of the production line. Testing shall be performed throughout the entire model year to the extent possible. Engines selected shall cover the broadest range of production possible.

(1)(i) The required sample size for Category 1 engine manufacturers is one percent of projected annual U.S.-directed production for all Category 1 engine families, provided that no engine tested fails to meet applicable emission standards. Test engines shall include a proportional sample from each engine family. The required sample size is zero if a manufacturer's projected annual production for all Category 1 engine families is less than 100.

(ii) The required sample size for a Category 2 engine family is one percent of projected annual U.S.-directed production for that engine family, with a minimum sample size of one test per model year provided that no engine tested fails to meet applicable emission standards.

(2) Manufacturers may elect to test additional engines. All additional engines must be tested in accordance with the applicable test procedures of this part.

(3) The Administrator may reject any engines selected by the manufacturer if he/she determines that such engines are not representative of actual production.

(b) The manufacturer must assemble the test engines using the same mass production process that will be used for engines to be introduced into commerce.

(c) No quality control, testing, or assembly procedures will be used on any test engine or any portion thereof, including parts and subassemblies, that have not been or will not be used during the production and assembly of all other engines of that family, except with the approval of the Administrator.

§ 94.506 Test procedures.

(a)(1) For engines subject to the provisions of this subpart, the prescribed test procedures are those procedures described in Subpart B of this part, except as provided in this section.

(2) The Administrator may, on the basis of a written application by a manufacturer, prescribe test procedures other than those specified in paragraph (a)(1) of this section for any engine he/she determines is not susceptible to satisfactory testing using procedures specified in paragraph (a)(1) of this section.

(3) If test procedures other than those in Subpart B of this part were used in certification of the engine family being

tested under this subpart (other than alternate test procedures necessary for testing of a development engine instead of a low hour engine under § 94.9), the manufacturer shall use the test procedures used in certification for production line testing.

(b)(1) The manufacturer may not adjust, repair, prepare, modify, or perform any emission test on any test engine unless this adjustment, repair, preparation, modification and/or test is documented in the manufacturer's engine assembly and inspection procedures and is actually performed by the manufacturer or unless this adjustment, repair, preparation, modification and/or test is required or permitted under this subpart or is approved in advance by the Administrator.

(2) Any adjustable engine parameter must be set to values or positions that are within the range specified in the approved application for certification.

(3) The Administrator may adjust or require to be adjusted any engine parameter which the Administrator has determined to be subject to adjustment for certification and production line testing, to any setting within the specified adjustable range of that parameter, as determined by the Administrator, prior to the performance of any test.

(c) Service Accumulation/Green Engine Factor. The manufacturer shall accumulate up to 300 hours of service on the engines to be tested. In lieu of conducting such service accumulation, the manufacturer may establish a Green Engine Factor for each regulated pollutant for each engine family to be used in calculating emissions test results. The manufacturer shall obtain the approval of the Administrator prior to using a Green Engine Factor.

(d) The manufacturer may not perform any maintenance on test engines after selection for testing.

(e) If an engine is shipped to a facility other than the production facility for production line testing, and an adjustment or repair is necessary because of such shipment, the engine manufacturer must perform the necessary adjustment or repair only after the initial test of the engine, except where the Administrator has determined that the test would be impossible to perform or would permanently damage the engine.

(f) If an engine cannot complete the service accumulation or an emission test, because of a malfunction, the manufacturer may request that the Administrator authorize either the repair of that engine or its deletion from the test sequence.

(g) *Retesting.* If an engine manufacturer determines that any production line emission test of an engine is invalid, the engine must be retested in accordance with the requirements of this subpart. Emission results from all tests must be reported to EPA, including test results the manufacturer determines are invalid. The engine manufacturer must also include a detailed explanation of the reasons for invalidating any test in the quarterly report required in § 94.508(e). In the event a retest is performed, a request may be made to the Administrator, within ten days of the end of the production quarter, for permission to substitute the after-repair test results for the original test results. The Administrator will either affirm or deny the request by the engine manufacturer within ten working days from receipt of the request.

§ 94.507 Sequence of testing.

(a) If one or more engines fail a production line test, then the manufacturer must test two additional engines for each engine that fails.

(b) The two additional engines tested under paragraph (a) of this section shall be selected from either the next fifteen produced in that engine family, or from those engines produced in that engine family within 48 hours of the completion of the failed test.

§ 94.508 Calculation and reporting of test results.

(a) Manufacturers shall calculate initial test results using the applicable test procedure specified in § 94.506(a). These results must also include the Green Engine Factor, if applicable. The manufacturer shall round these results, in accordance with ASTM E 29–93a (incorporated by reference at § 94.5), to the number of decimal places contained in the applicable emission standard expressed to one additional significant figure.

(b) Test results shall be calculated by summing the initial test results derived in paragraph (a) of this section for each test engine, dividing by the number of tests conducted on the engine, and rounding in accordance with ASTM E 29–93a (incorporated by reference at § 94.5) to the same number of decimal places contained in the applicable standard expressed to one additional decimal place. (For example, if the applicable standard is 7.8, then round the test results to two places to the right of the decimal.)

(c) Manufacturers shall calculate the final test results for each test engine by applying the appropriate deterioration factors, derived in the certification process for the engine family, to the test results described in paragraph (b) of this section, and rounding in accordance with ASTM E 29–93a (incorporated by reference at § 94.5) to the same number of decimal places contained in the applicable standard expressed to one additional decimal place. (For example, if the applicable standard is 7.8, then round the test results to two places to the right of the decimal.)

(d) If, subsequent to an initial failure of a production line test, the average of the test results for the failed engine and the two additional engines tested, is greater than any applicable emission standard or FEL, the engine family is deemed to be in non-compliance with applicable emission standards, and the manufacturer must notify the Administrator within 2 working days of such noncompliance.

(e) Within 30 calendar days of the end of each quarter, each manufacturer must submit to the Administrator a report which includes the following information:

(1) The location and description of the manufacturer's emission test facilities which were utilized to conduct testing reported pursuant to this section;

(2) Total production and sample size for each engine family;

(3) The applicable standards and/or FELs against which each engine family was tested;

(4) A description of the test engines;

(5) For each test conducted:

(i) A description of the test engine, including:

(A) Configuration and engine family identification;

(B) Year, make, and build date;

(C) Engine identification number;

(D) Number of hours of service accumulated on engine prior to testing; and

(E) Description of Green Engine Factor; how it is determined and how it is applied;

(ii) Location(s) where service accumulation was conducted and description of accumulation procedure and schedule, if applicable;

(iii) Test number, date, test procedure used, initial test results before and after rounding, and final test results for all production line emission tests conducted, whether valid or invalid, and the reason for invalidation of any test results, if applicable;

(iv) A complete description of any adjustment, modification, repair, preparation, maintenance, and testing which was performed on the test engine, has not been reported pursuant to any other paragraph of this subpart, and will not be performed on other production engines;

(v) Any other information the Administrator may request relevant to the determination whether the new engines being manufactured by the manufacturer do in fact conform with the regulations with respect to which the certificate of conformity was issued;

(6) For each failed engine as defined in § 94.510(a), a description of the remedy and test results for all retests as required by § 94.512(g);

(7) The date of the end of the engine manufacturer's model year production for each engine family tested; and

(8) The following signed statement and endorsement by an authorized representative of the manufacturer:

This report is submitted pursuant to Sections 213 and 208 of the Clean Air Act. This production line testing program was conducted in complete conformance with all applicable regulations under 40 CFR part 94. No emission-related changes to production processes or quality control procedures for the engine family tested have been made during this production line testing program that affect engines from the production line. All data and information reported herein is, to the best of (Company Name) knowledge, true and accurate. I am aware of the penalties associated with violations of the Clean Air Act and the regulations thereunder. (Authorized Company Representative.)

§ 94.509 Maintenance of records; submittal of information.

(a) The manufacturer for any new engine subject to any of the provisions of this subpart must establish, maintain, and retain the following adequately organized and indexed records:

(1) General records. A description of all equipment used to test engines in accordance with § 94.503. The equipment requirements in Subpart B of this part apply to tests performed under this subpart.

(2) Individual records. These records pertain to each production line test conducted pursuant to this subpart and include:

(i) The date, time, and location of each test;

(ii) The method by which the Green Engine Factor was calculated or the number of hours of service accumulated on the test engine when the test began and ended;

(iii) The names of all supervisory personnel involved in the conduct of the production line test;

(iv) A record and description of any adjustment, repair, preparation or modification performed on test engines, giving the date, associated time, justification, name(s) of the authorizing personnel, and names of all supervisory personnel responsible for the conduct of the action;

(v) If applicable, the date the engine was shipped from the assembly plant, associated storage facility or port facility, and the date the engine was received at the testing facility;

(vi) A complete record of all emission tests performed pursuant to this subpart (except tests performed directly by EPA), including all individual worksheets and/or other documentation relating to each test, or exact copies thereof, in accordance with the record requirements specified in Subpart B of this part;

(vii) A brief description of any significant events during testing not otherwise described under this paragraph (a)(2) of this section, commencing with the test engine selection process and including such extraordinary events as engine damage during shipment.

(3) The manufacturer must establish, maintain and retain general records, pursuant to paragraph (a)(1) of this section, for each test cell that can be used to perform emission testing under this subpart.

(b) The manufacturer must retain all records required to be maintained under this subpart for a period of eight (8) years after completion of all testing. Records may be retained as hard copy (i.e., on paper) or reduced to microfilm, floppy disk, or some other method of data storage, depending upon the manufacturer's record retention procedure; provided, that in every case, all the information contained in the hard copy is retained.

(c) The manufacturer must, upon request by the Administrator, submit the following information with regard to engine production:

(1) Projected production for each configuration within each engine family for which certification has been requested and/or approved.

(2) Number of engines, by configuration and assembly plant, scheduled for production.

(d) Nothing in this section limits the Administrator's discretion to require a manufacturer to establish, maintain, retain or submit to EPA information not specified by this section.

(e) All reports, submissions, notifications, and requests for approval made under this subpart must be addressed to the Designated Officer.

(f) The manufacturer must electronically submit the results of its production line testing using an EPA information format.

§ 94.510 Compliance with criteria for production line testing.

(a) A failed engine is one whose final test results pursuant to § 94.508(c), for one or more of the applicable pollutants, exceed an applicable emission standard or FEL.

(b) An engine family is deemed to be in noncompliance, for purposes of this subpart, if at any time throughout the model year, the average of an initial failed engine and the two additional engines tested, is greater than any applicable emission standard or FEL.

§ 94.511 [Reserved]

§ 94.512 Suspension and revocation of certificates of conformity.

(a) The certificate of conformity is suspended with respect to any engine that fails a production line test pursuant to § 94.510(a), effective from the time the testing of that engine is completed.

(b) The Administrator may suspend the certificate of conformity for an engine family which is in noncompliance pursuant to § 94.510(b), thirty days after the engine family is deemed to be in noncompliance.

(c) If the results of testing pursuant to this subpart indicate that engines of a particular family produced at one plant of a manufacturer do not conform to the regulations with respect to which the certificate of conformity was issued, the Administrator may suspend the certificate of conformity with respect to that family for engines manufactured by the manufacturer at all other plants.

(d) The Administrator may suspend a certificate of conformity for any engine family in whole or in part if:

(1) The manufacturer fails to comply with any of the requirements of this subpart.

(2) The manufacturer submits false or incomplete information in any report or information provided to the Administrator under this subpart.

(3) The manufacturer renders inaccurate any test data submitted under this subpart.

(4) An EPA enforcement officer is denied the opportunity to conduct activities authorized in this subpart.

(5) An EPA enforcement officer is unable to conduct activities authorized in § 94.504 for any reason.

(e) The Administrator shall notify the manufacturer in writing of any suspension or revocation of a certificate of conformity in whole or in part; a suspension or revocation is effective upon receipt of such notification or thirty days from the time an engine family is deemed to be in noncompliance under §§ 94.508(d), 94.510(a), or 94.510(b), whichever is earlier, except that the certificate is immediately suspended with respect to any failed engines as provided for in paragraph (a) of this section.

(f) The Administrator may revoke a certificate of conformity for an engine

family when the certificate has been suspended pursuant to paragraph (b) or (c) of this section if the remedy is one requiring a design change or changes to the engine and/or emission control system as described in the application for certification of the affected engine family.

(g) Once a certificate has been suspended for a failed engine, as provided for in paragraph (a) of this section, the manufacturer must take the following actions before the certificate is reinstated for that failed engine:

(1) Remedy the nonconformity;

(2) Demonstrate that the engine conforms to applicable standards or family emission limits by retesting if applicable, the engine in accordance with this part; and

(3) Submit a written report to the Administrator, after successful completion of testing on the failed engine, which contains a description of the remedy and test results for each engine in addition to other information that may be required by this part.

(h) Once a certificate for a failed engine family has been suspended pursuant to paragraph (b) or (c) of this section, the manufacturer must take the following actions before the Administrator will consider reinstating the certificate:

(1) Submit a written report to the Administrator which identifies the reason for the noncompliance of the engines, describes the remedy, including a description of any quality control and/or quality assurance measures to be taken by the manufacturer to prevent future occurrences of the problem, and states the date on which the remedies will be implemented.

(2) Demonstrate that the engine family for which the certificate of conformity has been suspended does in fact comply with the regulations of this part by testing engines selected from normal production runs of that engine family. Such testing must comply with the provisions of this subpart. If the manufacturer elects to continue testing individual engines after suspension of a certificate, the certificate is reinstated for any engine actually determined to be in conformance with the applicable standards or family emission limits through testing in accordance with the applicable test procedures, provided that the Administrator has not revoked the certificate pursuant to paragraph (f) of this section.

(i) Once the certificate has been revoked for an engine family, if the manufacturer desires to continue introduction into commerce of a modified version of that family, the following actions must be taken before the Administrator may issue a certificate for that modified family:

(1) If the Administrator determines that the change(s) in engine design may have an effect on emission performance deterioration, the Administrator shall notify the manufacturer, within five working days after receipt of the report in paragraph (h)(1) of this section, whether subsequent testing under this subpart will be sufficient to evaluate the change or changes or whether additional testing will be required; and

(2) After implementing the change or changes intended to remedy the nonconformity, the manufacturer must demonstrate that the modified engine family does in fact conform with the regulations of this part by testing engines selected from normal production runs of that engine family. When both of these requirements are met, the Administrator shall reissue the certificate or issue a new certificate, as the case may be, to include that family. If this subsequent testing reveals failing data the revocation remains in effect.

(j) At any time subsequent to an initial suspension of a certificate of conformity for a test engine pursuant to paragraph (a) of this section, but not later than 30 days (or such other period as may be allowed by the Administrator) after notification of the Administrator's decision to suspend or revoke a certificate of conformity in whole or in part pursuant to paragraph (b), (c), or (f) of this section, a manufacturer may request a hearing as to whether the tests have been properly conducted or any sampling methods have been properly applied.

(k) Any suspension of a certificate of conformity under paragraphs (a),(b),(c) and (d) of this section:

(1) Shall be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with §§ 94.513, 94.514, and 94.515; and

(2) Need not apply to engines no longer in the possession of the manufacturer.

(l) After the Administrator suspends or revokes a certificate of conformity pursuant to this section or voids a certificate of conformity under paragraph § 94.215, and prior to the commencement of a hearing under § 94.513, if the manufacturer demonstrates to the Administrator's satisfaction that the decision to suspend, revoke, or void the certificate was based on erroneous information, the Administrator shall reinstate the certificate.

(m) To permit a manufacturer to avoid storing non-test engines while conducting subsequent testing of the noncomplying family, a manufacturer may request that the Administrator conditionally reinstate the certificate for that family. The Administrator may reinstate the certificate subject to the following condition: the manufacturer must commit to recall all engines of that family produced from the time the certificate is conditionally reinstated if the family fails subsequent testing and must commit to remedy any nonconformity at no expense to the owner.

§ 94.513 Request for public hearing.

(a) If the manufacturer disagrees with the Administrator's decision to suspend or revoke a certificate or disputes the basis for an automatic suspension pursuant to § 94.512(a), the manufacturer may request a public hearing.

(b) The manufacturer's request shall be filed with the Administrator not later than 30 days after the Administrator's notification of his or her decision to suspend or revoke, unless otherwise specified by the Administrator. The manufacturer shall simultaneously serve two copies of this request upon the Designated Officer and file two copies with the Hearing Clerk of the Agency. Failure of the manufacturer to request a hearing within the time provided constitutes a waiver of the right to a hearing. Subsequent to the expiration of the period for requesting a hearing as of right, the Administrator may, in his or her discretion and for good cause shown, grant the manufacturer a hearing to contest the suspension or revocation.

(c) A manufacturer shall include in the request for a public hearing:

(1) A statement as to which configuration(s) within a family is to be the subject of the hearing;

(2) A concise statement of the issues to be raised by the manufacturer at the hearing, except that in the case of the hearing requested under § 94.512(j), the hearing is restricted to the following issues:

(i) Whether tests have been properly conducted (specifically, whether the tests were conducted in accordance with applicable regulations under this part and whether test equipment was properly calibrated and functioning);

(ii) Whether there exists a basis for distinguishing engines produced at plants other than the one from which engines were selected for testing which would invalidate the Administrator's decision under § 94.512(c));

(3) A statement specifying reasons why the manufacturer believes it will prevail on the merits of each of the issues raised; and

(4) A summary of the evidence which supports the manufacturer's position on each of the issues raised.

(d) A copy of all requests for public hearings will be kept on file in the Office of the Hearing Clerk and will be made available to the public during Agency business hours.

§ 94.514 Administrative procedures for public hearing.

(a) The Presiding Officer shall be an Administrative Law Judge appointed pursuant to 5 U.S.C. 3105 (see also 5 CFR part 930).

(b) The Judicial Officer shall be an officer or employee of the Agency appointed as a Judicial Officer by the Administrator, pursuant to this section, who shall meet the qualifications and perform functions as follows:

(1) *Qualifications.* A Judicial Officer may be a permanent or temporary employee of the Agency who performs other duties for the Agency. The Judicial Officer shall not be employed by the Office of Enforcement or have any connection with the preparation or presentation of evidence for a hearing held pursuant to this subpart. The Judicial Officer shall be a graduate of an accredited law school and a member in good standing of a recognized Bar Association of any state or the District of Columbia.

(2) *Functions.* The Administrator may consult with the Judicial Officer or delegate all or part of the Administrator's authority to act in a given case under this section to a Judicial Officer, provided that this delegation does not preclude the Judicial Officer from referring any motion or case to the Administrator when the Judicial Officer determines such referral to be appropriate.

(c) For the purposes of this section, one or more Judicial Officers may be designated by the Administrator. As work requires, a Judicial Officer may be designated to act for the purposes of a particular case.

(d)(1) In the case of a hearing requested under § 94.512(j), when it clearly appears from the data and other information contained in the request for a hearing that no genuine and substantial question of fact or law exists with respect to the issues specified in § 94.513(c)(2), the Administrator may enter an order denying the request for a hearing and reaffirming the original decision to suspend or revoke a certificate of conformity.

(2) In the case of a hearing requested under § 94.513 to challenge a suspension of a certificate of conformity for the reason(s) specified in § 94.512(d), when it clearly appears from the data and other information contained in the request for the hearing that no genuine and substantial question of fact or law exists with respect to the issue of whether the refusal to comply with this subpart was caused by conditions and circumstances outside the control of the manufacturer, the Administrator may enter an order denying the request for a hearing and suspending the certificate of conformity.

(3) Any order issued under paragraph (d)(1) or (d)(2) of this section has the force and effect of a final decision of the Administrator, as issued pursuant to § 94.516.

(4) If the Administrator determines that a genuine and substantial question of fact or law does exist with respect to any of the issues referred to in paragraphs (d)(1) and (d)(2) of this section, the Administrator shall grant the request for a hearing and publish a notice of public hearing in the **Federal Register** or by such other means as the Administrator finds appropriate to provide notice to the public.

(e) *Filing and service.* (1) An original and two copies of all documents or papers required or permitted to be filed pursuant to this section and § 94.513(c) must be filed with the Hearing Clerk of the Agency. Filing is considered timely if mailed, as determined by the postmark, to the Hearing Clerk within the time allowed by this section and § 94.513(b). If filing is to be accomplished by mailing, the documents must be sent to the address set forth in the notice of public hearing referred to in paragraph (d)(4) of this section.

(2) To the maximum extent possible, testimony will be presented in written form. Copies of written testimony will be served upon all parties as soon as practicable prior to the start of the hearing. A certificate of service will be provided on or accompany each document or paper filed with the Hearing Clerk. Documents to be served upon the Director of the Engine Programs and Compliance Division must be sent by registered mail to: Director, Engine Programs and Compliance Division 6403–J, U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460. Service by registered mail is complete upon mailing.

(f) *Computation of time.* (1) In computing any period of time prescribed or allowed by this section, except as otherwise provided, the day of the act or event from which the designated period of time begins to run is not included. Saturdays, Sundays, and federal legal holidays are included in computing the period allowed for the filing of any document or paper, except that when the period expires on a Saturday, Sunday, or federal legal holiday, the period is extended to include the next following business day.

(2) A prescribed period of time within which a party is required or permitted to do an act is computed from the time of service, except that when service is accomplished by mail, three days will be added to the prescribed period.

(g) *Consolidation.* The Administrator or the Presiding Officer in his or her discretion may consolidate two or more proceedings to be held under this section for the purpose of resolving one or more issues whenever it appears that consolidation will expedite or simplify consideration of these issues. Consolidation does not affect the right of any party to raise issues that could have been raised if consolidation had not occurred.

(h) *Hearing date.* To the extent possible hearings under § 94.513 will be scheduled to commence within 14 days of receipt of the request for a hearing.

§ 94.515 Hearing procedures.

The procedures provided in 40 CFR 86.1014–84(i) through (s) apply for hearings requested pursuant to § 94.513 regarding suspension, revocation, or voiding of a certificate of conformity.

§ 94.516 Appeal of hearing decision.

The procedures provided in 40 CFR 86.1014–84 (t) through (aa) apply for appeals filed with respect to hearings held pursuant to § 94.515.

§ 94.517 Treatment of confidential information.

Except for information required by § 94.508(e)(2) and quarterly emission test results described in § 94.508(e), information submitted pursuant to this subpart shall be made available to the public by EPA, notwithstanding any claim of confidentiality made by the submitter. The provisions for treatment of confidential information described in § 94.4 apply to the information required by § 94.508(e)(2) and quarterly emission test results described in § 94.508(e).

Subpart G—[Reserved]

Subpart H—Recall Regulations

§ 94.701 Applicability.

The requirements of this subpart are applicable to all engines subject to the provisions of this part.

§ 94.702 Definitions.

The definitions in Subpart A of this part apply to this subpart.

§ 94.703 Applicability of 40 CFR part 85, subpart S.

(a) Engines subject to provisions of this part are subject to recall regulations specified in 40 CFR part 85, subpart S, except for the items set forth in this section.

(b) In 40 CFR 85.1801, section 216 of the Clean Air Act applies, rather than section 214 of the Act.

(c) In 40 CFR 85.1802(a), section 213 of the Act applies, rather than section 202 of the Act.

(d) In 40 CFR 85.1803(a) and 85.1805(a)(1) the reference to ''family emission limits'' as defined in this part 94 promulgated under section 213 of the Act applies, rather than the reference to ''family particulate emission limits as defined in 40 CFR part 86 promulgated under section 202 of the Act''.

(e) Throughout the subpart references to ''engines'' apply rather than references to ''vehicles or engines''.

Subpart I—Importation of Nonconforming Engines

§ 94.801 Applicability.

(a) Except where otherwise indicated, this subpart is applicable to importers of engines (and vessels containing engines) for which the Administrator has promulgated regulations under this part prescribing emission standards, that are offered for importation or imported into the United States, but which engines, at the time of importation or being offered for importation, are not covered by certificates of conformity issued under section 213 and section 206(a) of the Clean Air Act (that is, which are nonconforming engines as defined in § 94.2), and this part. Compliance with regulations under this subpart does not relieve any person or entity from compliance with other applicable provisions of the Clean Air Act.

(b) Regulations prescribing further procedures for the importation of engines into the Customs territory of the United States, as defined in 19 U.S.C. 1202, are set forth in U.S. Customs Service regulations (19 CFR Chapter I).

§ 94.802 Definitions.

The definitions of Subpart A of this part apply to this subpart.

§ 94.803 Admission.

(a) A nonconforming engine offered for importation may be admitted into the United States pursuant to the provisions of this subpart. Subpart C of this part, including § 94.222, describes how to certify engines installed on vessels before they are imported.

(b) To obtain admission, the importer must submit to the Administrator a written request for approval containing the following:

(1) Identification of the importer of the engine and the importer's address, telephone number, and taxpayer identification number;

(2) Identification of the engine's owner, the owner's address, telephone number, and taxpayer identification number;

(3) Identification of the engine including make, model, identification number, and original production year;

(4) Information indicating the provision in this subpart under which the engine is to be imported, including a demonstration of how it qualifies for the requested exemption;

(5) Identification of the place(s) where the engine is to be stored until EPA approval of the importer's application to the Administrator for final admission;

(6) Authorization for EPA enforcement officers to conduct inspections or testing otherwise permitted by the Act or regulations thereunder; and

(7) Such other information as is deemed necessary by the Administrator.

§ 94.804 Exemptions.

(a) *General provisions.* (1) Unless otherwise specified, any person may apply for the exemptions allowed by this section.

(2) Paragraph (b) of this section describes the provisions that apply to temporary exemptions. Paragraph (c) of this section describes provisions that apply to permanent exemptions.

(3) Applications for exemption under this section shall be mailed to the Designated Officer.

(b) Notwithstanding other requirements of this subpart, a nonconforming engine that qualifies for a temporary exemption under this paragraph (b) may be conditionally admitted into the United States if prior written approval for the conditional admission is obtained from the Administrator. Conditional admission is to be under bond. The Administrator may request that the U.S. Customs Service require a specific bond amount to ensure compliance with the requirements of the Act and this subpart. A written request for a temporary exemption from the Administrator shall contain the information required in § 94.803. Noncompliance with the provisions of this paragraph (b) will be considered unlawful importation and may result in the forfeiture of the total amount of the bond, exportation of the engine, and/or imposition of civil penalties.

(1) *Exemption for repairs or alterations.* A person may conditionally import under bond a nonconforming engine solely for purpose of repair(s) or alteration(s). The engine may not be operated in the United States other than for the sole purpose of repair or alteration or shipment to the point of repair or alteration and to the port of export. It may not be sold or leased in the United States and is to be exported upon completion of the repair(s) or alteration(s).

(2) *Testing exemption.* A person may conditionally import under bond a nonconforming engine for testing, subject to the requirements of § 94.905. A test engine may be operated in the United States provided that the operation is an integral part of the test. This exemption is limited to a period not exceeding one year from the date of importation unless a request is made by the appropriate importer, and subsequently granted by EPA, concerning the engine in accordance with § 94.905 for a subsequent one-year period.

(3) *Display exemptions.* A person may conditionally import under bond a nonconforming engine solely for display purposes, subject to both of the following requirements:

(i) A display engine may be imported by any person for purposes related to a business or the public interest. Such purposes do not include collections normally inaccessible or unavailable to the public on a daily basis, display of an engine at a dealership, private use, or other purpose that the Administrator determines is not appropriate for display exemptions. A display engine may not be sold or leased in the United States and may not be operated in the United States except for the operation incident and necessary to the display purpose.

(ii) A display exemption is granted for 12 months or for the duration of the display purpose, whichever is shorter. Extensions of up to 12 months each are available upon approval by the Administrator. In no circumstances, however, may the total period of exemption exceed 36 months.

(c) A nonconforming engine that qualifies for a permanent exemption under this paragraph (c) may be admitted into the United States if prior written approval is obtained from the Administrator. A written request for a permanent exemption from the Administrator shall contain the information required in § 94.803. Noncompliance with the provisions of this paragraph (c) will be considered unlawful importation and may result in the exportation of the engine and/or imposition of civil penalties.

(1) *National security exemption.* Notwithstanding any other requirement of this subpart, an engine may be permanently imported into the United States under the national security exemption found in § 94.908.

(2) *Competition exemption.* Notwithstanding any other requirement of this subpart, an engine may be permanently imported into the United States under the competition exemption found in § 94.906(c).

(3) *Incomplete marine engine exemption.* An engine that is intended to be modified prior to being placed into service as a marine engine may be imported in a nonconforming configuration, subject to the following provisions:

(i) The modified engine must be covered by a valid marine engine certificate issued under this part prior to importation and held by a post-manufacture marinizer. (Note: Prior to certification, manufacturers and post-manufacture marinizers may import uncertified engines for testing, as specified in paragraph (b)(2) of this section.)

(ii) The engine may not be placed into non-marine service prior to being installed in a vessel.

(iii) The importer must obtain written approval from the Administrator prior to admission.

(iv) The engine and engine container must be labeled as specified by the Administrator.

(v) A manufacturer importing an engine under this exemption must modify the engine to comply with the requirements of this part.

§ 94.805 Prohibited acts; penalties.

(a) The importation of an engine (including an engine incorporated in an imported marine vessel) which is not covered by a certificate of conformity other than in accordance with this subpart and the entry regulations of the U.S. Customs Service is prohibited. Failure to comply with this section is a violation of section 213(d) and section 203 of the Act.

(b) Unless otherwise permitted by this subpart, during a period of conditional admission, the importer of an engine may not:

(1) Operate the engine in the United States; or

(2) Sell or lease or offer the engine for sale or lease.

(c) An engine conditionally admitted pursuant to § 94.804 and not otherwise permanently exempted or excluded by the end of the period of conditional admission, or within such additional time as the Administrator and the U.S. Customs Service may allow, is deemed to be unlawfully imported into the United States in violation of section 213(d) and section 203 of the Act, unless the engine has been delivered to the U.S. Customs Service for export or other disposition under applicable Customs laws and regulations by the end of the period of conditional admission. An engine not so delivered is subject to seizure by the U.S. Customs Service.

(d) An importer who violates section 213(d) and section 203 of the Act is subject to a civil penalty under section 205 of the Act and § 94.1106. In addition to the penalty provided in the Act and § 94.1106, where applicable, a person or entity who imports an engine under the exemption provisions of § 94.804 and, who fails to deliver the engine to the U.S. Customs Service by the end of the period of conditional admission is liable for liquidated damages in the amount of the bond required by applicable Customs laws and regulations.

Subpart J—Exclusion and Exemption Provisions

§ 94.901 Purpose and applicability.

The provisions of this subpart identify excluded engines (i.e., engines not covered by the Act) and allow for the exemption of engines from certain provisions of this part. The applicability of the exclusions is described in § 94.903, and the applicability of the exemption allowances is described in §§ 94.904 through 94.909.

§ 94.902 Definitions.

The definitions of Subpart A of this part apply to this subpart.

§ 94.903 Exclusions.

(a) Upon written request with supporting documentation, EPA will make written determinations as to whether certain engines are excluded from applicability of this part. Any engines that are determined to be excluded are not subject to the regulations under this part. Requests to determine whether certain engines are excluded should be sent to the Designated Officer.

(b) EPA will maintain a list of models of engines that have been determined to be excluded from coverage under this part. This list will be available to the public and may be obtained by writing to the address in paragraph (a) of this section.

(c) In addition to the engines excluded in paragraph (a) of this section, certain engines are not subject to the requirements and prohibitions of this part because they are excluded from the definitions of ''marine engine'' in § 94.2.

§ 94.904 Exemptions.

(a) Except as specified otherwise in this subpart, the provisions of §§ 94.904 through 94.911 exempt certain new engines from the standards, other requirements, and prohibitions of this part, except for the requirements of this subpart and the requirements of § 94.1104. Additional requirements may apply for imported engines; these are described in subpart I of this part.

(b)(1) Any person may request a testing exemption subject to the provisions of § 94.905.

(2) Any engine manufacturer may request a national security exemption subject to the provisions of § 94.908.

(3) Engines manufactured for export purposes are exempt without application, subject to the provisions of § 94.909, except as otherwise specified by § 94.909.

(4) Manufacturer-owned engines are exempt without application, subject to the provisions of § 94.906(a).

(5) Display engines are exempt without application, subject to the provisions of § 94.906(b). This does not apply to imported engines (see § 94.804).

(6) Engines used solely for competition are exempt, subject to the provisions of § 94.906(c).

(7) Engines used on foreign trade vessels are exempt, subject to the provisions of § 94.906(d).

§ 94.905 Testing exemption.

(a)(1) The Administrator may exempt from the standards and/or other requirements and prohibitions of this part new engines that are being used solely for the purpose of conducting a test program. Any person requesting an exemption for the purpose of conducting a test program must demonstrate the following:

(i) That the proposed test program has a purpose which constitutes an appropriate basis for an exemption in accordance this section;

(ii) That the proposed test program necessitates the granting of an exemption;

(iii) That the proposed test program exhibits reasonableness in scope; and

(iv) That the proposed test program exhibits a degree of oversight and control consonant with the purpose of the test program and EPA's monitoring requirements.

(2) Paragraphs (b), (c), (d), and (e) of this section describe what constitutes a sufficient demonstration for each of the four elements identified in paragraphs (a)(1)(i) through (iv) of this section.

(b) With respect to the purpose of the proposed test program, an appropriate purpose would be research, investigations, studies, demonstrations, technology development, or training, but not national security. A concise statement of purpose is a required item of information.

(c) With respect to the necessity that an exemption be granted, necessity arises from an inability to achieve the stated purpose in a practicable manner without performing or causing to be performed one or more of the prohibited acts under § 94.1103. In appropriate circumstances, time constraints may be a sufficient basis for necessity, but the cost of certification alone, in the absence of extraordinary circumstances, is not a basis for necessity.

(d) With respect to reasonableness, a test program must exhibit a duration of reasonable length and affect a reasonable number of engines. In this regard, required items of information include:

(1) An estimate of the program's duration; and

(2) The maximum number of engines involved.

(e) With respect to control, the test program must incorporate procedures consistent with the purpose of the test and be capable of affording EPA monitoring capability. As a minimum, required items of information include:

(1) The technical nature of the testing;

(2) The location(s) of the testing;

(3) The time or work duration of the testing;

(4) The ownership arrangement with regard to the engines involved in the testing;

(5) The intended final disposition of the engines;

(6) The manner in which the engine identification numbers will be identified, recorded, and made available; and

(7) The means or procedure whereby test results will be recorded.

(f) A manufacturer of new engines may request a testing exemption to cover engines intended for use in test programs planned or anticipated over the course of a subsequent two-year period. Unless otherwise required by the Director, Engine Programs and Compliance Division, a manufacturer requesting such an exemption need only furnish the information required by paragraphs (a)(1) and (d)(2) of this section along with a description of the recordkeeping and control procedures that will be employed to assure that the engines are used for purposes consistent with paragraph (a) of this section.

(g) For engines being used for the purpose of developing a fundamentally new emission control technology related either to an alternative fuel or an aftertreatment device, the Administrator may exempt the engine from some or all of the applicable standards of this part for the full useful life of the engine, subject to the provisions of paragraphs (a) through (f) of this section.

§ 94.906 Manufacturer-owned exemption, display exemption, competition exemption, and foreign trade vessel exemption.

(a) *Manufacturer-owned exemption.* Any manufacturer-owned engine, as defined by § 94.2, is exempt from § 94.1103, without application, if the manufacturer complies with the following terms and conditions:

(1) The manufacturer must establish, maintain, and retain the following adequately organized and indexed information on each exempted engine:

(i) engine identification number;

(ii) Use of the engine on exempt status; and

(iii) Final disposition of any engine removed from exempt status.

(2) The manufacturer must provide right of entry and access to these records to EPA Enforcement Officers as outlined in § 94.208.

(3) The manufacturer must permanently affix a label to each engine on exempt status, unless the requirement is waived or an alternate procedure is approved by the Director, Engine Programs and Compliance Division. This label should:

(i) Be affixed in a readily visible portion of the engine;

(ii) Be attached in such a manner that cannot be removed without destruction or defacement;

(iii) State in the English language and in block letters and numerals of a color that contrasts with the background of the label, the following information:

(A) The label heading ''Emission Control Information'';

(B) Full corporate name and trademark of manufacturer;

(C) Engine displacement, engine family identification, and model year of engine; or person of office to be contacted for further information about the engine;

(D) The statement ''This engine is exempt from the prohibitions of 40 CFR 94.1103.''

(4) No provision of paragraph (a)(3) of this section prevents a manufacturer from including any other information it desires on the label.

(5) The engine is not used in revenue-generating service, or sold.

(b) *Display exemption.* An uncertified engine that is to be used solely for display purposes, and that will only be operated incident and necessary to the display purpose, and will not be sold unless an applicable certificate of conformity has been obtained for the engine, is exempt without request from the standards of this part. This does not apply to imported engines (see § 94.804).

(c) *Competition exemption.* The Administrator may exempt, upon request, engines that are intended by the manufacturer to be used solely for competition. Engines that are modified after they have been placed into service and are used solely for competition are exempt without request.

(d) *Foreign trade exemption.* (1) The Administrator may exempt, upon request of the vessel owner, engines used on U.S.-flagged vessels meeting the provisions of paragraph (d)(2) of this section.

(2) Vessel owners requesting an exemption under this paragraph (d) must demonstrate to the Administrator that:

(i) The vessel will spend less than 25 percent of its operating time within 320 nautical kilometers of U.S. territory; or

(ii) That it will not operate between two United States ports.

(3) For the purpose of this paragraph (d), the term ''vessel owner'' includes any entities that have contracted to purchase a new marine vessel.

(4) The engine manufacturer must label the engine, and must include on the label the following statement: ''THIS ENGINE IS SUBJECT TO THE MARPOL ANNEX VI NO_X LIMITS AND IS INTENDED FOR USE SOLELY ON VESSELS THAT SERVICE FOREIGN PORTS AS DESCRIBED IN 40 CFR 94.906.'', or a similar statement approved by the Administrator.

§ 94.907 Engine dressing exemption.

(a) This section applies to you if you are an engine manufacturer (this includes post-manufacture marinizers).

(b) The only requirements or prohibitions from this part that apply to an engine that is exempt under this section are in this section.

(c) The requirements and prohibitions of this part apply to all engines in the scope of § 94.1 that do not qualify for the engine dressing exemption.

(d) New marine engines that meets all the following criteria are exempt under this section:

(1) You must produce it by marinizing an engine covered by a valid certificate of conformity from one of the following programs:

(i) Heavy-duty highway engines (40 CFR part 86).

(ii) Land-based nonroad diesel engines (40 CFR part 89).

(iii) Locomotive engines (40 CFR part 92).

(2) The engine must have the label that required under 40 CFR part 86, 89, or 92.

(3) You must not make any changes to the certified engine that could reasonably be expected to increase its emissions. For example, if you make any of the following changes to one of these engines, you do not qualify for the engine dressing exemption:

(i) Change any fuel system parameters from the certified configuration.

(ii) Replace an original turbocharger.

(iii) Modify or design the marine engine cooling or aftercooling system so that temperatures or heat rejection rates are outside the original engine manufacturer's specified ranges.

(4) The engine model must not be primarily for marine applications. This means that total sales of the engine model, from all companies, must be mostly for non-marine applications.

(e) If you dress an engine under this exemption, you must do all of the following:

(1) Make sure the original engine label will remain clearly visible after installation in the vessel.

(2) Add a permanent supplemental label to the engine in a position where it will remain clearly visible after installation in the vessel. In your engine label, do the following:

(i) Include the heading: ''Marine Engine Emission Control Information''.

(ii) Include your full corporate name and trademark.

(iii) State: ''This engine was marinized without affecting its emission controls.''

(iv) State the date you finished marinizing the engine (month and year).

(3) Send a signed letter to the Designated Officer by the end of each calendar year (or less often if we tell you) with all the following information:

(i) Identify your full corporate name, address, and telephone number.

(ii) List the engine models you expect to produce under this exemption in the coming year.

(iii) State: ''We produce each listed engine model for marine application without making any changes that could increase its certified emission levels, as described in 40 CFR 94.907.''

(f) In general you may use up your inventory of engines that are not certified to new marine emission standards if they were originally manufactured before the date of the new standards. However, stockpiling these engines is a violation of § 94.1103(a)(1)(i)(A).

(g) If your engines do not meet the criteria listed in paragraphs (d)(2) through (d)(4) of this section, they will be subject to the standards and prohibitions of this part. Marinization without an exemption would be a violation of § 94.1103(a)(1) and/or the tampering prohibitions of the applicable land-based regulations (40 CFR Parts 86, 89, or 92).

(h)(1) If you are the original manufacturer and marinizer of an exempted engine, you must send us emission test data on the appropriate marine duty cycles. You can include the data in your application for certification or in the letter described in paragraph (e)(3) of this section.

(2) If you are the original manufacturer of an exempted engine that is marinized by a post-manufacture marinizer, you may be required to send us emission test data on the appropriate marine duty cycles. If such data are requested you will be allowed a reasonable amount of time to collect the data.

§ 94.908 National security exemption.

(a)(1) Any marine engine, otherwise subject to this part, that is used in a vessel that exhibits substantial features ordinarily associated with military combat such as armor, permanently affixed weaponry, specialized electronic warfare systems, unique stealth performance requirements, and/or unique combat maneuverability requirements and which will be owned and/or used by an agency of the federal government with the responsibility for national defense, will be exempt from the regulations in this subpart for reasons of national security. No request for this exemption is necessary.

(2) Manufacturers may request a national security exemption for any marine engine, otherwise subject to this part, which does not meet the conditions described in paragraph (a)(1) of this section. A manufacturer requesting a national security exemption must state the purpose for which the exemption is required and the request must be endorsed by an agency of the federal government charged with responsibility for national defense.

(b) EPA will maintain a list of models of marine engines (and the vessels which use them) that have been granted a national security exemption under paragraph (a)(2) of this section. This list will be available to the public and may be obtained by writing to the Designated Officer.

§ 94.909 Export exemptions.

(a) A new engine intended solely for export, and so labeled or tagged on the outside of any container and on the engine, is subject to the provisions of § 94.1103, unless the importing country has new marine engine emission standards which differ from EPA standards.

(b) For the purpose of paragraph (a) of this section, a country having no standards whatsoever is deemed to be a country having emission standards which differ from EPA standards.

(c) It is a condition of any exemption for the purpose of export under paragraph (a) of this section, that such exemption is void ab initio with respect to a new engine intended solely for export, where such engine is sold, or offered for sale, to an ultimate purchaser or otherwise distributed or introduced into commerce in the United States for purposes other than export.

§ 94.910 Granting of exemptions.

(a) If upon completion of the review of an exemption request made pursuant to § 94.905 or § 94.908, EPA determines it is appropriate to grant such an exemption, a memorandum of exemption is to be prepared and submitted to the person requesting the exemption. The memorandum is to set forth the basis for the exemption, its scope, and such terms and conditions as are deemed necessary. Such terms and conditions generally include, but are not limited to, agreements by the applicant to conduct the exempt activity in the manner described to EPA, create and maintain adequate records accessible to EPA at reasonable times, employ labels for the exempt engines setting forth the nature of the exemption, take appropriate measures to assure that the terms of the exemption are met, and advise EPA of the termination of the activity and the ultimate disposition of the engines.

(b) Any exemption granted pursuant to paragraph (a) of this section is deemed to cover any subject engine only to the extent that the specified terms and conditions are complied with. A breach of any term or condition causes the exemption to be void ab initio with respect to any engine. Consequently, the causing or the performing of an act prohibited under § 94.1103(a)(1) or (a)(3), other than in strict conformity with all terms and conditions of this exemption, renders the person to whom the exemption is granted, and any other person to whom the provisions of § 94.1103(a) are applicable, liable to suit under sections 204 and 205 of the Act.

§ 94.911 Submission of exemption requests.

Requests for exemption or further information concerning exemptions and/or the exemption request review procedure should be addressed to the Designated Officer.

Subpart K—[Reserved]

Subpart L—General Enforcement Provisions and Prohibited Acts

§ 94.1101 Applicability.

The requirements of this subpart are applicable to all persons with respect to engines subject to the provisions of Subpart A of this part.

§ 94.1102 Definitions.

The definitions of subpart A of this part apply to this subpart.

§ 94.1103 Prohibited acts.

(a) The following acts and the causing thereof are prohibited:

(1)(i)(A) In the case of a manufacturer of new engines, the sale, the offering for sale, the introduction into commerce, the delivery for introduction into commerce, or the distribution in commerce of any new engine that is subject to the standards of this part, unless such engine is covered by a certificate of conformity issued (and in effect) under regulations found in this part.

(B) The manufacture of a engine for the purpose of an act listed in paragraph (a)(1)(i)(A) of this section unless such engine is covered by a certificate of conformity issued (and in effect) under regulations found in this part prior to its introduction into commerce.

(ii) In the case of any person, except as provided in Subpart I of this part, the importation into the United States of any engine manufactured on or after the implementation date of the applicable emission limits for the relevant engine, unless such engine is covered by a certificate of conformity issued (and in effect) under regulations found in this part.

(2)(i) For a person to fail or refuse to permit access to or copying of records or to fail to make reports or provide information required under this part.

(ii) For a person to fail or refuse to permit entry, testing, or inspection authorized under this part.

(iii) For a person to fail or refuse to perform tests, or to have tests performed as required by this part.

(iv) For a person to fail to establish or maintain records as required under this part.

(3)(i) For a person to remove or render inoperative a device or element of design installed on or in a engine in compliance with regulations under this part, or to set any adjustable parameter to a setting outside of the range specified by the manufacturer, as approved in the application for certification by the Administrator.

(ii) For a person to manufacture, sell or offer to sell, or install, a part or component intended for use with, or as part of, a engine, where a principal effect of the part or component is to bypass, defeat, or render inoperative a device or element of design installed on or in a engine in compliance with regulations issued under this part, and where the person knows or should know that the part or component is being offered for sale or installed for this use or put to such use.

(iii) for a person to deviate from the provisions of § 94.11 when rebuilding an engine (or rebuilding a portion of an engine or engine system).

(4) For a manufacturer of a new engine subject to standards prescribed under this part:

(i) To sell, offer for sale, or introduce or deliver for introduction into commerce, a new engine unless the manufacturer has complied with the requirements of § 94.1107.

(ii) To sell, offer for sale, or introduce or deliver for introduction into commerce, a new engine unless all required labels and tags are affixed to the engine in accordance with § 94.212.

(iii) To fail or refuse to comply with the requirements of § 94.1108.

(iv) Except as provided in § 94.211, to provide directly or indirectly in any communication to the ultimate purchaser or a subsequent purchaser that the coverage of a warranty under the Act is conditioned upon use of a part, component, or system manufactured by the manufacturer or a person acting for the manufacturer or under its control, or conditioned upon service performed by such persons.

(v) To fail or refuse to comply with the terms and conditions of the warranty under § 94.1107.

(5) For a manufacturer of marine vessels to distribute in commerce, sell, offer for sale, or deliver for introduction into commerce a new vessel containing an engine not covered by a certificate of conformity applicable for an engine model year the same as or later than the calendar year in which the manufacture of the new vessel is initiated. (Note: For the purpose of this paragraph (a)(5), the manufacture of a vessel is initiated when the keel is laid, or the vessel is at a similar stage of construction.)

(6) For any person to install a recreational marine engine in a vessel that is manufactured on or after the implementation date of the applicable standards and that is not a recreational vessel.

(b) For the purposes of enforcement of this part, the following apply:

(1) Nothing in paragraph (a)(3) of this section is to be construed to require the use of any manufacturer's parts in maintaining or repairing a engine.

(2)(i) Actions for the purpose of repair or replacement of a device or element of design or any other item are not considered prohibited acts under paragraph (a)(3)(i) of this section if the action is a necessary and temporary procedure, the device or element is replaced upon completion of the procedure, and the action results in the proper functioning of the device or element of design.

(ii) Actions for emergency purposes are not considered prohibited acts under paragraph (a)(3)(i) of this section if the action is a necessary and temporary procedure and the device or element is replaced such that the proper functioning of the device or element of design is restored as soon as possible.

(3) Where the Administrator determines that no engine that is certified to the requirements of this part is produced by any manufacturer with the appropriate physical or performance characteristics to repower a vessel, the Administrator may allow an engine manufacturer to introduce into commerce a replacement engine without complying with all of the otherwise applicable requirements of this part. Such engine shall not be subject to the prohibitions of paragraph (a)(1) of this section, provided that:

(i) The engine requiring replacement is not certified or is certified to emission standards that are less stringent than those in effect when the replacement engine is built; and

(ii) The engine manufacturer or its agent takes ownership and possession of the engine being replaced in partial exchange for the replacement engine; and

(iii) The replacement engine is clearly labeled with the following language, or similar alternate language approved by the Administrator: ''THIS ENGINE DOES NOT COMPLY WITH FEDERAL MARINE ENGINE EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE FOR AN ENGINE MANUFACTURED PRIOR TO JANUARY 1 [INSERT APPROPRIATE YEAR] IS A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY''; and

(iv) In cases where an engine is to be imported for replacement purposes under the provisions of this paragraph (b)(3) of this section, the term ''engine manufacturer'' shall not apply to an individual or other entity that does not possess a current Certificate of Conformity issued by EPA under this part; and

(v) Where the replacement engine is intended to replace an engine that is

certified to emission standards that are less stringent than those in effect when the replacement engine is built, the replacement engine shall be identical in all material respects to a certified configuration of the same or later model year as the engine being replaced; and

(vi) Engines sold pursuant to the provisions of this paragraph will neither generate nor use emission credits and will not be part of any accounting under the averaging, banking and trading program.

§ 94.1104 General enforcement provisions.

(a) *Information collection provisions.* (1)(i) Every manufacturer of new engines and other persons subject to the requirements of this part must establish and maintain records, perform tests, make reports and provide information the Administrator may reasonably require to determine whether the manufacturer or other person has acted or is acting in compliance with this part or to otherwise carry out the provisions of this part, and must, upon request of an officer or employee duly designated by the Administrator, permit the officer or employee at reasonable times to have access to and copy such records. The manufacturer shall comply in all respects with the requirements of subpart E of this part.

(ii) Every manufacturer or owner of engines exempted from the standards or requirements of this part must establish and maintain records, perform tests, make reports and provide information the Administrator may reasonably require regarding the emissions of such engines.

(2) For purposes of enforcement of this part, an officer or employee duly designated by the Administrator, upon presenting appropriate credentials, is authorized:

(i) To enter, at reasonable times, any establishment of the manufacturer, or of any person whom the manufacturer engaged to perform any activity required under paragraph (a)(1) of this section, for the purposes of inspecting or observing any activity conducted pursuant to paragraph (a)(1) of this section; and

(ii) To inspect records, files, papers, processes, controls, and facilities used in performing an activity required by paragraph (a)(1) of this section, by the manufacturer or by a person whom the manufacturer engaged to perform the activity.

(b) *Exemption provision.* The Administrator may exempt a new engine from § 94.1103 upon such terms and conditions as the Administrator may find necessary for the purpose of export, research, investigations, studies, demonstrations, or training, or for reasons of national security, or for other purposes allowed by subpart J of this part.

(c) *Importation provision.* (1) A new engine, offered for importation or imported by a person in violation of § 94.1103 is to be refused admission into the United States, but the Secretary of the Treasury and the Administrator may, by joint regulation, provide for deferring a final determination as to admission and authorizing the delivery of such a engine offered for import to the owner or consignee thereof upon such terms and conditions (including the furnishing of a bond) as may appear to them appropriate to insure that the engine will be brought into conformity with the standards, requirements, and limitations applicable to it under this part.

(2) If a engine is finally refused admission under this paragraph (c), the Secretary of the Treasury shall cause disposition thereof in accordance with the customs laws unless it is exported, under regulations prescribed by the Secretary, within 90 days of the date of notice of the refusal or additional time as may be permitted pursuant to the Treasury regulations.

(3) Disposition in accordance with the customs laws may not be made in such manner as may result, directly or indirectly, in the sale, to the ultimate consumer, of a new engine that fails to comply with applicable standards of the Administrator under this part.

(d) *Export provision.* A new engine intended solely for export, and so labeled or tagged on the outside of the container if used and on the engine, shall be subject to the provisions of § 94.1103, except that if the country that is to receive the engine has emission standards that differ from the standards prescribed under subpart A of this part, then the engine must comply with the standards of the country that is to receive the engine.

(e) *Recordkeeping.* Except where specified otherwise, records required by this part must be kept for eight (8) years.

§ 94.1105 Injunction proceedings for prohibited acts.

(a) The district courts of the United States have jurisdiction to restrain violations of § 94.1103(a).

(b) Actions to restrain violations of § 94.1103(a) must be brought by and in the name of the United States. In an action, subpoenas for witnesses who are required to attend a district court in any district may run into any other district.

§ 94.1106 Penalties.

(a) *Violations.* A violation of the requirements of this subpart is a violation of the applicable provisions of the Act, including sections 213(d) and 203, and is subject to the penalty provisions thereunder.

(1) A person who violates § 94.1103(a)(1), (a)(4), (a)(5), or (a)(6), or a manufacturer or dealer who violates § 94.1103(a)(3)(i) or (iii) is subject to a civil penalty of not more than $25,000 for each violation unless modified by the Debt Collection Improvement Act (31 U.S.C. chapter 37) and/or regulations issued there under.

(2) A person other than a manufacturer or dealer who violates § 94.1103(a)(3)(i) or (iii) or any person who violates § 94.1103(a)(3)(ii) is subject to a civil penalty of not more than $2,500 for each violation unless modified by the Debt Collection Improvement Act and/or regulations issued thereunder.

(3) A violation with respect to § 94.1103(a)(1), (a)(3)(i), (a)(4), or (a)(5) constitutes a separate offense with respect to each engine.

(4) A violation with respect to § 94.1103(a)(3)(ii) constitutes a separate offense with respect to each part or component. Each day of a violation with respect to § 94.1103(a)(5) constitutes a separate offense.

(5) A person who violates § 94.1103(a)(2) or (a)(5) is subject to a civil penalty of not more than $25,000 per day of violation unless modified by the Debt Collection Improvement Act and/or regulations issued thereunder.

(b) *Civil actions.* The Administrator may commence a civil action to assess and recover any civil penalty under paragraph (a) of this section.

(1) An action under this paragraph (b) may be brought in the district court of the United States for the district in which the defendant resides or has the Administrator's principal place of business, and the court has jurisdiction to assess a civil penalty.

(2) In determining the amount of a civil penalty to be assessed under this paragraph (b), the court is to take into account the gravity of the violation, the economic benefit or savings (if any) resulting from the violation, the size of the violator's business, the violator's history of compliance with Title II of the Act, action taken to remedy the violation, the effect of the penalty on the violator's ability to continue in business, and such other matters as justice may require.

(3) In any such action, subpoenas for witnesses who are required to attend a district court in any district may run into any other district.

(c) *Administrative assessment of certain penalties.*—(1) *Administrative penalty authority.* In lieu of commencing a civil action under paragraph (b) of this section, the Administrator may assess any civil penalty prescribed in paragraph (a) of this section, except that the maximum amount of penalty sought against each violator in a penalty assessment proceeding shall not exceed $200,000, unless the Administrator and the Attorney General jointly determine that a matter involving a larger penalty amount is appropriate for administrative penalty assessment. Any such determination by the Administrator and the Attorney General is not subject to judicial review. Assessment of a civil penalty shall be by an order made on the record after opportunity for a hearing held in accordance with the procedures found at 40 CFR Part 22. The Administrator may compromise, or remit, with or without conditions, any administrative penalty which may be imposed under this section.

(2) *Determining amount.* In determining the amount of any civil penalty assessed under this paragraph (c), the Administrator shall take into account the gravity of the violation, the economic benefit or savings (if any) resulting from the violation, the size of the violator's business, the violator's history of compliance with Title II of the Act, action taken to remedy the violation, the effect of the penalty on the violator's ability to continue in business, and such other matters as justice may require.

(3) *Effect of administrator's action.* (i) Action by the Administrator under this paragraph (c) does not affect or limit the Administrator's authority to enforce any provisions of the Act; except that any violation with respect to which the Administrator has commenced and is diligently prosecuting an action under this paragraph (c), or for which the Administrator has issued a final order not subject to further judicial review and for which the violator has paid a penalty assessment under this paragraph shall not be the subject of a civil penalty action under paragraph (b) of this section.

(ii) No action by the Administrator under this paragraph (c) shall affect a person's obligation to comply with a section of this part.

(4) *Finality of order.* An order issued under this paragraph (c) is to become final 30 days after its issuance unless a petition for judicial review is filed under paragraph (c)(5) of this section.

(5) *Judicial review.* A person against whom a civil penalty is assessed in accordance with this paragraph (c) may seek review of the assessment in the United States District Court for the District of Columbia or for the district in which the violation is alleged to have occurred, in which such person resides, or where the person's principal place of business is located, within the 30-day period beginning on the date a civil penalty order is issued. The person shall simultaneously send a copy of the filing by certified mail to the Administrator and the Attorney General. The Administrator shall file in the court within 30 days a certified copy, or certified index, as appropriate, of the record on which the order was issued. The court is not to set aside or remand any order issued in accordance with the requirements of this paragraph (c) unless substantial evidence does not exist in the record, taken as a whole, to support the finding of a violation or unless the Administrator's assessment of the penalty constitutes an abuse of discretion, and the court is not to impose additional civil penalties unless the Administrator's assessment of the penalty constitutes an abuse of discretion. In any proceedings, the United States may seek to recover civil penalties assessed under this section.

(6) *Collection.* (i) If any person fails to pay an assessment of a civil penalty imposed by the Administrator as provided in this part after the order making the assessment has become final or after a court in an action brought under paragraph (c)(5) of this section has entered a final judgment in favor of the Administrator, the Administrator shall request that the Attorney General bring a civil action in an appropriate district court to recover the amount assessed (plus interest at rates established pursuant to section 6621(a)(2) of the Internal Revenue Code of 1986 (26 U.S.C. 6621(a)(2)) from the date of the final order or the date of final judgment, as the case may be). In such an action, the validity, amount, and appropriateness of the penalty is not subject to review.

(ii) A person who fails to pay on a timely basis the amount of an assessment of a civil penalty as described in paragraph (c)(6)(i) of this section shall be required to pay, in addition to that amount and interest, the United States' enforcement expenses, including attorney's fees and costs for collection proceedings, and a quarterly nonpayment penalty for each quarter during which the failure to pay persists. The nonpayment penalty is an amount equal to ten percent of the aggregate amount of that person's penalties and nonpayment penalties which are unpaid as of the beginning of such quarter.

§ 94.1107 Warranty provisions.

(a) The manufacturer of each engine must warrant to the ultimate purchaser and each subsequent purchaser or owner that the engine is designed, built, and equipped so as to conform at the time of sale with applicable regulations under section 213 of the Act, and is free from defects in materials and workmanship which cause such engine to fail to conform with applicable regulations for its warranty period (as determined under § 94.10).

(b) For the purposes of this section, the owner of any engine warranted under this part is responsible for the proper maintenance of the engine. Proper maintenance includes replacement and/or service, as needed, at the owner's expense at a service establishment or facility of the owner's choosing, of all parts, items, or devices which were in general use with engines prior to 1999. For diesel engines, this would generally include replacement or cleaning of the fuel delivery and injection system.

§ 94.1108 In-use compliance provisions.

(a) Effective with respect to engines subject to the requirements of this part:

(1) If the Administrator determines that a substantial number of any class or category of engines, although properly maintained and used, do not conform to the regulations prescribed under section 213 of the Act when in actual use throughout their useful life period (as defined under § 94.2), the Administrator shall immediately notify the manufacturer of such nonconformity and require the manufacturer to submit a plan for remedying the nonconformity of the engines with respect to which such notification is given.

(i) The manufacturer's plan shall provide that the nonconformity of any such engines which are properly used and maintained will be remedied at the expense of the manufacturer.

(ii) If the manufacturer disagrees with such determination of nonconformity and so advises the Administrator, the Administrator shall afford the manufacturer and other interested persons an opportunity to present their views and evidence in support thereof at a public hearing. Unless, as a result of such hearing, the Administrator withdraws such determination of nonconformity, the Administrator shall, within 60 days after the completion of such hearing, order the manufacturer to provide prompt notification of such nonconformity in accordance with paragraph (a)(2) of this section.

(2) Any notification required to be given by the manufacturer under paragraph (a)(1) of this section with

respect to any class or category of engines shall be given to ultimate purchasers, subsequent purchasers (if known), and dealers (as applicable) in such manner and containing such information as required in Subparts E and H of this part.

(3)(i) The certifying manufacturer shall furnish with each new engine written instructions for the proper maintenance and use of the engine by the ultimate purchaser as required under § 94.211.

(ii) The instruction under paragraph (a)(3)(i) of this section must not include any condition on the ultimate purchaser's using, in connection with such engine, any component or service (other than a component or service provided without charge under the terms of the purchase agreement) which is identified by brand, trade, or corporate name. Such instructions also must not directly or indirectly distinguish between service performed by the franchised dealers of such manufacturer, or any other service establishments with which such manufacturer has a commercial relationship, and service performed by independent engine repair facilities with which such manufacturer has no commercial relationship.

(iii) The prohibition of paragraph (a)(3)(ii) of this section may be waived by the Administrator if:

(A) The manufacturer satisfies the Administrator that the engine will function properly only if the component or service so identified is used in connection with such engine; and

(B) The Administrator finds that such a waiver is in the public interest.

(iv) In addition, the manufacturer shall indicate by means of a label or tag permanently affixed to the engine that the engine is covered by a certificate of conformity issued for the purpose of assuring achievement of emission standards prescribed under section 213 of the Act. This label or tag shall also contain information relating to control of emissions as prescribed under § 94.212.

(b) The manufacturer bears all cost obligation any dealer incurs as a result of a requirement imposed by paragraph (a) of this section. The transfer of any such cost obligation from a manufacturer to a dealer through franchise or other agreement is prohibited.

(c) If a manufacturer includes in an advertisement a statement respecting the cost or value of emission control devices or systems, the manufacturer shall set forth in the statement the cost or value attributed to these devices or systems by the Secretary of Labor (through the Bureau of Labor Statistics). The Secretary of Labor, and his or her representatives, has the same access for this purpose to the books, documents, papers, and records of a manufacturer as the Comptroller General has to those of a recipient of assistance for purposes of section 311 of the Act.

Appendix I to Part 94—Emission-Related Engine Parameters and Specifications

I. Basic Engine Parameters—Reciprocating Engines.
- 1. Compression ratio.
- 2. Type of air aspiration (natural, Roots blown, supercharged, turbocharged).
- 3. Valves (intake and exhaust).
- a. Head diameter dimension.
- b. Valve lifter or actuator type and valve lash dimension.
- 4. Camshaft timing.
- a. Valve opening—intake exhaust (degrees from TDC or BDC).
- b. Valve closing—intake exhaust (degrees from TDC or BDC).
- c. Valve overlap (degrees).
- 5. Ports—two stroke engines (intake and/or exhaust).
- a. Flow area.
- b. Opening timing (degrees from TDC or BDC).
- c. Closing timing (degrees from TDC or BDC).

II. Intake Air System.
- 1. Roots blower/supercharger/turbocharger calibration.
- 2. Charge air cooling.
- a. Type (air-to-air; air-to-liquid).
- b. Type of liquid cooling (engine coolant, dedicated cooling system).
- c. Performance (charge air delivery temperature (°F) at rated power and one other power level under ambient conditions of 80°F and 110°F, and 3 minutes and 15 minutes after selecting rated power, and 3 minutes and 5 minutes after selecting other power level).
- 3. Temperature control system calibration.
- 4. Maximum allowable inlet air restriction.

III. Fuel System.
- 1. General.
- a. Engine idle speed.
- 2. Fuel injection—compression ignition engines.
- a. Control parameters and calibrations.
- b. Transient enrichment system calibration.
- c. Air-fuel flow calibration.
- d. Altitude compensation system calibration.
- e. Operating pressure(s).
- f. Injector timing calibration.

IV. Engine Cooling System.
- 1. Thermostat calibration.

V. Exhaust System.
- 1. Maximum allowable back pressure.

VI. Exhaust Emission Control System.
- 1. Air injection system.
- a. Control parameters and calibrations.
- b. Pump flow rate.
- 2. EGR system.
- a. Control parameters and calibrations.
- b. EGR valve flow calibration.
- 3. Catalytic converter system.
- a. Active surface area.
- b. Volume of catalyst.
- c. Conversion efficiency.
- 4. Backpressure.

VII. Crankcase Emission Control System.
- 1. Control parameters and calibrations.
- 2. Valve calibrations.

VIII. Auxiliary Emission Control Devices (AECD).
- 1. Control parameters and calibrations.
- 2. Component calibration(s).

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