

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

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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, ex-

cept 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
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