

§ 1042.601

40 CFR Ch. I (7–1–10 Edition)

additive. Determine adjustment factors separately for different test segments. For example, determine separate adjustment factors for different modes of a discrete-mode steady-state test. You may use either of the following different approaches for engines that use aftertreatment with infrequent regeneration events:

(1) You may disregard this section if regeneration does not significantly affect emission levels for an engine family (or configuration) or if it is not practical to identify when regeneration occurs. If you do not use adjustment factors under this section, your engines must meet emission standards for all testing, without regard to regeneration.

(2) If your engines use aftertreatment technology with extremely infrequent regeneration and you are unable to apply the provisions of this section, you may ask us to approve an alternate methodology to account for regeneration events.

(b) *Calculating average adjustment factors.* Calculate the average adjustment factor (EF_A) based on the following equation:

$$EF_A = (F)(EF_H) + (1 - F)(EF_L)$$

Where:

F = The frequency of the regeneration event during normal in-use operation, expressed in terms of the fraction of equivalent tests during which the regeneration occurs. You may determine F from in-use operating data or running replicate tests. For example, if you observe that the regeneration occurs 125 times during 1,000 MW-hrs of operation, and your engine typically accumulates 1 MW-hr per test, F would be $(125) \div (1,000) \div (1) = 0.125$. No further adjustments, including weighting factors, may be applied to F.

EF_H = Measured emissions from a test segment in which the regeneration occurs.

EF_L = Measured emissions from a test segment in which the regeneration does not occur.

(c) *Applying adjustment factors.* Apply adjustment factors based on whether regeneration occurs during the test run. You must be able to identify regeneration in a way that is readily apparent during all testing.

(1) If regeneration does not occur during a test segment, add an upward adjustment factor to the measured emission rate. Determine the upward

adjustment factor (UAF) using the following equation:

$$UAF = EF_A - EF_L$$

(2) If regeneration occurs or starts to occur during a test segment, subtract a downward adjustment factor from the measured emission rate. Determine the downward adjustment factor (DAF) using the following equation:

$$DAF = EF_H - EF_A$$

(d) *Sample calculation.* If EF_L is 0.10 g/kW-hr, EF_H is 0.50 g/kW-hr, and F is 0.1 (the regeneration occurs once for each ten tests), then:

$$EF_A = (0.1)(0.5 \text{ g/kW-hr}) + (1.0 - 0.1)(0.1 \text{ g/kW-hr}) = 0.14 \text{ g/kW-hr.}$$

$$UAF = 0.14 \text{ g/kW-hr} - 0.10 \text{ g/kW-hr} = 0.04 \text{ g/kW-hr.}$$

$$DAF = 0.50 \text{ g/kW-hr} - 0.14 \text{ g/kW-hr} = 0.36 \text{ g/kW-hr.}$$

(e) *Ramped-modal testing.* Develop a single sets of adjustment factors for the entire test. If a regeneration has started but has not been completed when you reach the end of a test, use good engineering judgment to reduce your downward adjustments to be proportional to the emission impact that occurred in the test.

(f) *Discrete-mode testing.* Develop separate adjustment factors for each test mode. If a regeneration has started but has not been completed when you reach the end of the sampling time for a test mode extend the sampling period for that mode until the regeneration is completed.

(g) *Category 3 engines.* We may specify an alternate methodology to account for regeneration events from Category 3 engines. If we do not, the provisions of this section apply as specified.

[73 37243, June 30, 2008, as amended at 75 FR 23005, Apr. 30, 2010]

Subpart G—Special Compliance Provisions

§ 1042.601 General compliance provisions for marine engines and vessels.

Engine and vessel manufacturers, as well as owners, operators, and rebuilders of engines and vessels subject to the requirements of this part, and all other persons, must observe the provisions of this part, the requirements and

prohibitions in 40 CFR part 1068, and the provisions of the Clean Air Act. The provisions of 40 CFR part 1068 apply for compression-ignition marine engines as specified in that part, subject to the following provisions:

(a) The following prohibitions apply with respect to recreational marine engines and recreational vessels:

(1) Installing a recreational marine engine in a vessel that is not a recreational vessel is a violation of 40 CFR 1068.101(a)(1).

(2) For a vessel with an engine that is certified and labeled as a recreational marine engine, using it in a manner inconsistent with its intended use as a recreational vessel violates 40 CFR 1068.101(a)(1), except as allowed by this chapter.

(b) Subpart I of this part describes how the prohibitions of 40 CFR 1068.101(a)(1) apply for certain remanufactured engines. The provisions of 40 CFR 1068.105 do not allow the installation of a new remanufactured engine in a vessel that is defined as a new vessel unless the remanufactured engine is subject to the same standards as the standards applicable to freshly manufactured engines of the required model year.

(c) The provisions of 40 CFR 1068.120 apply when rebuilding marine engines, except as specified in subpart I of this part. The following additional requirements also apply when rebuilding marine engines equipped with exhaust aftertreatment:

(1) Follow all instructions from the engine manufacturer and aftertreatment manufacturer for checking, repairing, and replacing aftertreatment components. For example, you must replace the catalyst if the catalyst assembly is stamped with a build date more than ten years ago and the manufacturer's instructions state that catalysts over ten years old must be replaced when the engine is rebuilt.

(2) Measure pressure drop across the catalyst assembly to ensure that it is neither higher nor lower than the manufacturer's specifications and repair or replace exhaust-system components as needed to bring the pressure drop within the manufacturer's specifications.

(3) For engines equipped with exhaust sensors, verify that sensor outputs are within the manufacturer's recommended range and repair or replace any malfunctioning components (sensors, catalysts, or other components).

(d) The provisions of §1042.635 for the national security exemption apply instead of 40 CFR 1068.225.

(e) For replacement engines, apply the provisions of 40 CFR 1068.240 as described in §1042.615.

(f) For the purpose of meeting the defect-reporting requirements in 40 CFR 1068.501, if you manufacture other nonroad engines that are substantially similar to your marine engines, you may consider defects using combined marine and non-marine families.

(g) The selective enforcement audit provisions of 40 CFR part 1068 do not apply for Category 3 engines.

(h) The defect reporting requirements of 40 CFR 1068.501 apply for Category 3 engines, except the threshold for filing a defect report is two engines.

(i) You may not circumvent the requirements of this part or the Clean Air Act by manufacturing a vessel outside the United States or initially flagging a vessel in another country. The definition of "new marine engine" in §1042.901 includes provisions for U.S.-flagged vessels that are manufactured or reflagged outside of U.S. waters. These provisions have the effect of applying the prohibitions of 40 CFR 1068.101(a)(1) to such vessels no later than when they first enter U.S. waters. The inclusion of these provisions does not affect requirements or prohibitions of the Clean Air Act or other statutes that may apply to the vessel before it first enters U.S. waters.

[73 37243, June 30, 2008, as amended at 73 FR 59194, Oct. 8, 2008; 75 FR 23005, Apr. 30, 2010]

§1042.605 Dressing engines already certified to other standards for nonroad or heavy-duty highway engines for marine use.

(a) *General provisions.* If you are an engine manufacturer (including someone who marinizes a land-based engine), this section allows you to introduce new marine engines into U.S. commerce if they are already certified to the requirements that apply to compression-ignition engines under 40 CFR