§ 1045.301 When must I test my production-line engines?

(a) If you produce engines that are subject to the requirements of this part, you must test them as described in this subpart, except as follows:

(1) Small-volume engine manufacturers may omit testing under this subpart.

(2) We may exempt engine families with a projected U.S.-directed production volume below 150 units from routine testing under this subpart. Request this exemption in your application for certification and include your basis for projecting a production volume below 150 units. We will approve your request if we agree that you have made good-faith estimates of your production volumes. Your exemption is approved when we grant your certificate. You must promptly notify us if your actual production exceeds 150 units during the model year. If you exceed the production limit or if there is evidence of a nonconformity, we may require you to test production-line engines under this subpart, or under 40 CFR part 1068, subpart E, even if we have approved an exemption under this paragraph (a)(2).

(3) The requirements of this subpart do not apply to sterndrive/inboard engines.

(b) We may suspend or revoke your certificate of conformity for certain engine families if your production-line engines do not meet the requirements of this part or you do not fulfill your obligations under this subpart (see §§ 1045.325 and 1045.340).

(c) Other regulatory provisions authorize us to suspend, revoke, or void your certificate of conformity, or order recalls for engine families, without regard to whether they have passed these production-line testing requirements. The requirements of this subpart do not affect our ability to do selective enforcement audits, as described in 40 CFR part 1068. Individual engines in families that pass these production-line testing requirements must also conform to all applicable regulations of this part and 40 CFR part 1068.

(d) You may use alternate programs for testing production-line engines in the following circumstances:

(1) You may use analyzers and sampling systems that meet the field-testing requirements of 40 CFR part 1065, subpart J, but not the otherwise applicable requirements in 40 CFR part 1065 for laboratory testing, to demonstrate compliance with duty-cycle emission
standards if you double the minimum sampling rate specified in §1045.310(b). Use measured test results to determine whether engines comply with applicable standards without applying a measurement allowance. This alternate program does not require prior approval but we may disallow use of this option where we determine that use of field-grade equipment would prevent you from being able to demonstrate that your engines are being produced to conform to the specifications in your application for certification.

(2) You may ask to use another alternate program for testing production-line engines. In your request, you must show us that the alternate program gives equal assurance that your products meet the requirements of this part. We may waive some or all of this subpart’s requirements if we approve your alternate approach. For example, in certain circumstances you may be able to give us equal assurance that your products meet the requirements of this part by using less rigorous measurement methods if you offset that by increasing the number of test engines.

(e) If you certify an engine family with carryover emission data, as described in §1045.235(d), and these equivalent engine families consistently pass the production-line testing requirements over the preceding two-year period, you may ask for a reduced testing rate for further production-line testing for that family. The minimum testing rate is one engine per engine family. If we reduce your testing rate, we may limit our approval to any model years. In determining whether to approve your request, we may consider the number of engines that have failed the emission tests.

(f) We may ask you to make a reasonable number of production-line engines available for a reasonable time so we can test or inspect them for compliance with the requirements of this part.

§ 1045.305 How must I prepare and test my production-line engines?

This section describes how to prepare and test production-line engines. You must assemble the test engine in a way that represents the assembly procedures for other engines in the engine family. You must ask us to approve any deviations from your normal assembly procedures for other production engines in the engine family.

(a) Test procedures. Test your production-line engines using the applicable testing procedures in subpart F of this part to show you meet the duty-cycle emission standards in subpart B of this part. The not-to-exceed standards apply for this testing, but you need not do additional testing to show that production-line engines meet the not-to-exceed standards.

(b) Modifying a test engine. Once an engine is selected for testing (see §1045.310), you may adjust, repair, prepare, or modify it or check its emissions only if one of the following is true:

(1) You document the need for doing so in your procedures for assembling and inspecting all your production engines and make the action routine for all the engines in the engine family.

(2) This subpart otherwise specifically allows your action.

(3) We approve your action in advance.

(c) Engine malfunction. If an engine malfunction prevents further emission testing, ask us to approve your decision to either repair the engine or delete it from the test sequence.

(d) Setting adjustable parameters. Before any test, we may require you to adjust any adjustable parameter to any setting within its physically adjustable range.

(1) We may require you to adjust idle speed outside the physically adjustable range as needed, but only until the engine has stabilized emission levels (see paragraph (e) of this section). We may ask you for information needed to establish an alternate minimum idle speed.

(2) We may specify adjustments within the physically adjustable range by considering their effect on emission levels. We may also consider how likely it is that someone will make such an adjustment with in-use engines.

(e) Stabilizing emission levels. You may operate the engine to stabilize the emission levels before you test production-line engines. Using good engineering judgment, operate your engines in