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these production-line testing requirements must also conform to all applicable regulations of this part and part 1068 of this chapter.

(d) You may use alternate programs for testing production-line vehicles or 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 emission standards if you double the minimum sampling rate specified in §1054.310(b). Use measured test results to determine whether vehicles or 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 vehicles or 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 vehicles or 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 vehicles or engines.

(e) If you certify an engine family with carryover emission data, as described in §1051.235(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 vehicle or engine per engine family. If we reduce your testing rate, we may limit our approval to any number of model years. In determining whether to approve your request, we may consider the number of vehicles or

engines that have failed the emission tests.

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

(g) The requirements of this subpart do not apply to engine families certified under the provisions of §1051.630.

(h) Vehicles certified to the following standards are exempt from the production-line testing requirements of this subpart if no engine families in the averaging set have family emission limits that are different than the otherwise applicable standard:

- (1) Phase I or Phase 2 standards in §1051.103
- (2) Phase I standards in §1051.105
- (3) Phase I standards in §1051.107.
- (4) The standards in §1051.615.
- (5) The standards in §1051.145.

[67 FR 68347, Nov. 8, 2002, as amended at 70 FR 40498, July 13, 2005; 73 FR 59250, Oct. 8, 2008]

§1051.305 How must I prepare and test my production-line vehicles or engines?

This section describes how to prepare and test production-line vehicles or engines. Test the engine if your vehicle is certified to g/kW-hr standards; otherwise test the vehicle. You must assemble the test vehicle or engine in a way that represents the assembly procedures for other vehicles or engines in the engine family. You must ask us to approve any deviations from your normal assembly procedures for other production vehicles or engines in the engine family.

(a) *Test procedures.* Test your production-line vehicles or engines using the applicable testing procedures in subpart F of this part to show you meet the emission standards in subpart B of this part.

(b) *Modifying a test vehicle or engine.* Once a vehicle or engine is selected for testing (see §1051.310), 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

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and inspecting all your production vehicles or engines and make the action routine for all the vehicles or engines in the engine family.

(2) This subpart otherwise specifically allows your action.

(3) We approve your action in advance.

(c) *Malfunction.* If a vehicle or engine malfunction prevents further emission testing, ask us to approve your decision to either repair it 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 vehicle or 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 vehicles.

(3) We may specify an air-fuel ratio within the adjustable range specified in § 1051.115(d).

(e) *Stabilizing emission levels.* Before you test production-line vehicles or engines, you may operate the vehicle or engine to stabilize the emission levels. Using good engineering judgment, operate your vehicles or engines in a way that represents the way they will be used. You may operate each vehicle or engine for no more than the greater of two periods:

(1) 50 hours or 500 kilometers.

(2) The number of hours or kilometers you operated the emission-data vehicle used for certifying the engine family (see 40 CFR part 1065, subpart E, or the applicable regulations governing how you should prepare your test vehicle or engine).

(f) *Damage during shipment.* If shipping a vehicle or engine to a remote facility for production-line testing makes necessary an adjustment or repair, you must wait until after the initial emission test to do this work. We

may waive this requirement if the test would be impossible or unsafe, or if it would permanently damage the vehicle or engine. Report to us, in your written report under § 1051.345, all adjustments or repairs you make on test vehicles or engines before each test.

(g) *Retesting after invalid tests.* You may retest a vehicle or engine if you determine an emission test is invalid under subpart F of this part. Explain in your written report reasons for invalidating any test and the emission results from all tests. If we determine that you improperly invalidated a test, we may require you to ask for our approval for future testing before substituting results of the new tests for invalid ones.

[67 FR 68347, Nov. 8, 2002, as amended at 70 FR 40498, July 13, 2005; 73 FR 59251, Oct. 8, 2008]

§ 1051.310 How must I select vehicles or engines for production-line testing?

(a) Test engines from each engine family as described in this section based on test periods, as follows:

(1) For engine families with projected U.S.-directed production volume of at least 1,600, the test periods are consecutive quarters (3 months). However, if your annual production period is less than 12 months long, you may take the following alternative approach to define quarterly test periods:

(i) If your annual production period is 120 days or less, the whole model year constitutes a single test period.

(ii) If your annual production period is 121 to 210 days, divide the annual production period evenly into two test periods.

(iii) If your annual production period is 211 to 300 days, divide the annual production period evenly into three test periods.

(iv) If your annual production period is 301 days or longer, divide the annual production period evenly into four test periods.

(2) For engine families with projected U.S.-directed production volume below 1,600, the whole model year constitutes a single test period.

(b) Early in each test period, randomly select and test an engine from