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(3) If the original test engine for the engine family is not appropriate to show compliance for the new or modified nonroad engine, include new test data showing that the new or modified nonroad engine meets the requirements of this part.

(c) You may start producing the new or modified nonroad engine anytime after you send us your request. If we determine that the affected engines do not meet applicable requirements, we will require you to cease production of the engines and to recall and correct the engines at no expense to the owner. If you choose to produce engines under this paragraph (c), we will consider that to be consent to recall all engines that we determine do not meet applicable standards or other requirements and to remedy the nonconformity at no expense to the owner.

(d) You must give us test data within 30 days if we ask for more testing, or stop producing the engine if you cannot do this. You may give us an engineering evaluation instead of test data if we agree that you can address our questions without test data.

(e) If we determine that the certificate of conformity would not cover your new or modified nonroad engine, we will send you a written explanation of our decision. In this case, you may no longer produce these engines, though you may ask for a hearing for us to reconsider our decision (see § 1048.820).

§ 1048.230 How do I select engine families?

(a) Divide your product line into families of engines that you expect to have similar emission characteristics. Your engine family is limited to a single model year.

(b) Group engines in the same engine family if they are the same in all of the following aspects:

- (1) The combustion cycle.
- (2) The cooling system (water-cooled vs. air-cooled).
- (3) Configuration of the fuel system (for example, fuel injection vs. carburetion).
- (4) Method of air aspiration.
- (5) The number, location, volume, and composition of catalytic converters.

(6) The number, arrangement, and approximate bore diameter of cylinders.

(7) Evaporative emission controls.

(c) In some cases you may subdivide a group of engines that is identical under paragraph (b) of this section into different engine families. To do so, you must show you expect emission characteristics to be different during the useful life or that any of the following engine characteristics are different:

- (1) Method of actuating intake and exhaust timing (poppet valve, reed valve, rotary valve, etc.).
- (2) Location or size of intake and exhaust valves or ports.
- (3) Configuration of the combustion chamber.
- (4) Cylinder stroke.
- (5) Exhaust system.
- (6) Type of fuel.

(d) If your engines are not identical with respect to the things listed in paragraph (b) of this section, but you show that their emission characteristics during the useful life will be similar, we may approve grouping them in the same engine family.

(e) If you cannot appropriately define engine families by the method in this section, we will define them based on features related to emission characteristics.

(f) You may ask us to create separate families for exhaust emissions and evaporative emissions. If we do this, list both families on the emission control information label.

(g) Where necessary, you may divide an engine family into sub-families to meet different emission standards, as specified in § 1048.101(a)(2). For issues related to compliance and prohibited actions, we will generally apply decisions to the whole engine family. For engine labels and other administrative provisions, we may approve your request for separate treatment of sub-families.

§ 1048.235 What emission testing must I perform for my application for a certificate of conformity?

This section describes the emission testing you must perform to show compliance with the emission standards in §§ 1048.101(a) and (b) and 1048.105 during certification. See § 1048.205(s) regarding

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emission testing related to the field-testing emission standards.

(a) Test your emission-data engines using the procedures and equipment specified in subpart F of this part. For any testing related to evaporative emissions, use good engineering judgment to include a complete fuel system with the engine.

(b) Select engine families according to the following criteria:

(1) For exhaust testing, select from each engine family a test engine for each fuel type with a configuration that is most likely to exceed the exhaust emission standards, using good engineering judgment. Consider the emission levels of all exhaust constituents over the full useful life of the engine when operated in a piece of equipment.

(2) For evaporative testing, select from each engine family a test fuel system for each fuel type with a configuration that is most likely to exceed the evaporative emission standards, using good engineering judgment.

(c) You may use previously generated emission data in either of the following cases:

(1) You may submit emission data for equivalent engine families from previous years instead of doing new tests, but only if the data show that the test engine would meet all the requirements for the latest engine models. We may require you to do new emission testing if we believe the latest engine models could be substantially different from the previously tested engine.

(2) You may submit emission data for equivalent engine families performed to show compliance with other standards (such as California standards) instead of doing new tests, but only if the data show that the test engine would meet all of this part's requirements.

(d) We may choose to measure emissions from any of your test engines (or other engines from the engine family).

(1) If we do this, you must provide the test engine at the location we select. We may decide to do the testing at your plant or any other facility. If we choose to do the testing at your plant, you must schedule it as soon as possible and make available the instruments and equipment we need.

(2) If we measure emissions on one of your test engines, the results of that testing become the official data for the engine. Unless we later invalidate this data, we may decide not to consider your data in determining if your engine family meets the emission standards.

(3) Before we test one of your engines, we may set its adjustable parameters to any point within the physically adjustable ranges (see § 1048.115(e)).

(4) Calibrate the test engine within normal production tolerances for anything we do not consider an adjustable parameter (see § 1048.205(p)).

§ 1048.240 How do I demonstrate that my engine family complies with exhaust emission standards?

(a) For certification, your engine family is considered in compliance with the numerical emission standards in § 1048.101 (a) and (b), if all emission-data engines representing that family have test results showing emission levels at or below these standards.

(b) Your engine family does not comply if any emission-data engine representing that family has test results showing emission levels above the standards from § 1048.101 (a) and (b) for any pollutant.

(c) To compare emission levels from the test engine with the emission standards, apply deterioration factors to the measured emission levels. The deterioration factor is a number that shows the relationship between exhaust emissions at the end of useful life and at the low-hour test point. Specify the deterioration factors based on emission measurements using four significant figures, consistent with good engineering judgment. For example, deterioration factors must be consistent with emission increases observed from in-use testing with similar engines (see subpart E of this part). Small-volume engine manufacturers may use assigned deterioration factors that we establish. Apply the deterioration factors as follows:

(1) For engines that use aftertreatment technology, such as catalytic converters, the deterioration factor is the ratio of exhaust emissions at the end of useful life to exhaust