§ 1054.235 What exhaust emission testing must I perform for my application for a certificate of conformity?

This section describes the exhaust emission testing you must perform to show compliance with the emission standards in §§1054.103 and 1054.105. See §§1054.240 and 1054.245 and 40 CFR part 1065, subpart E, regarding service accumulation before emission testing.

(a) Select an emission-data engine from each engine family for testing as described in 40 CFR 1065.401. Select a configuration that is most likely to exceed the HC+NO\textsubscript{X} standard, using good engineering judgment. Configurations...
must be tested as they will be produced, including installed governors, if applicable.

(b) Test your emission-data engines using the procedures and equipment specified in subpart F of this part. In the case of dual-fuel engines, measure emissions when operating with each type of fuel for which you intend to certify the engine. In the case of flexible-fuel engines, measure emissions when operating with the fuel mixture that is most likely to cause the engine to exceed the applicable HC+NO\textsubscript{X} emission standard, though you may ask us to exclude fuel mixtures that you can show are not likely to occur in use.

(c) We may measure emissions from any of your emission-data engines or other engines from the emission family, as follows:

(1) We may decide to do the testing at your plant or any other facility. If we do this, you must deliver the engine to a test facility we designate. The engine you provide must include appropriate manifolds, aftertreatment devices, electronic control units, and other emission-related components not normally attached directly to the engine block. If we do the testing at your plant, you must schedule it as soon as possible and make available the instruments, personnel, and equipment we need.

(2) If we measure emissions on one of your engines, the results of that testing become the official emission results for the engine.

(3) We may set the adjustable parameters of your engine to any point within the physically adjustable ranges (see §1054.115(b)).

(4) We may calibrate your engine within normal production tolerances for anything we do not consider an adjustable parameter. For example, this would apply where we determine that an engine parameter is not an adjustable parameter (as defined in §1054.801) but that it is subject to production variability.

(d) You may ask to use carryover emission data from a previous model year instead of doing new tests, but only if all the following are true:

(1) The emission family from the previous model year differs from the current emission family only with respect to model year or other characteristics unrelated to emissions. You may also ask to add a configuration subject to §1054.225.

(2) The emission-data engine from the previous model year remains the appropriate emission-data engine under paragraph (b) of this section.

(3) The data show that the emission-data engine would meet all the requirements that apply to the emission family covered by the application for certification. For engines originally tested under the provisions of 40 CFR part 90, you may consider those test procedures to be equivalent to the procedures we specify in subpart F of this part.

(e) We may require you to test another engine of the same or different configuration in addition to the engine(s) tested under paragraph (b) of this section.

(f) If you use an alternate test procedure under 40 CFR 1065.10 and later testing shows that such testing does not produce results that are equivalent to the procedures specified in subpart F of this part, we may reject data you generated using the alternate procedure.

(g) Measure CO\textsubscript{2} and CH\textsubscript{4} with each low-hour certification test using the procedures specified in 40 CFR part 1065 starting in the 2011 and 2012 model years, respectively. Also measure N\textsubscript{2}O with each low-hour certification test using the procedures specified in 40 CFR part 1065 starting in the 2013 model year for any engine family that depends on NO\textsubscript{x} aftertreatment to meet emission standards. Small-volume engine manufacturers may omit measurement of N\textsubscript{2}O and CH\textsubscript{4}. Use the same units and modal calculations as for your other results to report a single weighted value for each constituent. Round the final values as follows:

(1) Round CO\textsubscript{2} to the nearest 1 g/kW-hr.

(2) Round N\textsubscript{2}O to the nearest 0.001 g/kW-hr.

(3) Round CH\textsubscript{4} to the nearest 0.001 g/kW-hr.