CFR 1065.510 and 1065.512) are not applicable to testing of complete locomotives or locomotive engines because locomotive operation and locomotive duty cycles are based on operator demand via locomotive notch settings rather than engine speeds and loads. The cycle validation criteria (40 CFR 1065.514) are not applicable to testing of complete locomotives but do apply for dynamometer testing of engines.

(b) You may use special or alternate procedures to the extent we allow as them under 40 CFR 1065.10. In some cases, we allow you to use procedures that are less precise or less accurate than the specified procedures if they do not affect your ability to show that your locomotives comply with the applicable emission standards. This generally requires emission levels to be far enough below the applicable emission standards so that any errors caused by greater imprecision or inaccuracy do not affect your ability to state unconditionally that the locomotives meet all applicable emission standards.

(c) This part allows (with certain limits) testing of either a complete locomotive or a separate uninstalled engine. When testing a locomotive, you must test the complete locomotive in its in-use configuration, except that you may disconnect the power output and fuel input for the purpose of testing. To calculate power from measured alternator/generator output, use an alternator/generator efficiency curve that varies with speed/load, consistent with good engineering judgment.

(d) Unless smoke standards do not apply for your locomotives or the testing requirement is waived, measure smoke emissions using the procedures in §1033.525.

(e) Use the applicable fuel listed in 40 CFR part 1065, subpart H, to perform valid tests.

(1) For diesel-fueled locomotives, use the appropriate diesel fuel specified in 40 CFR part 1065, subpart H, for emission testing. The applicable diesel test fuel is either the ultra low-sulfur diesel or low-sulfur diesel fuel, as specified in §1033.101. Identify the test fuel in your application for certification and ensure that the fuel inlet label is consistent with your selection of the test fuel (see §§1033.101 and 1033.135).

(2) You may ask to use as a test fuel commercially available diesel fuel similar but not identical to the applicable fuel specified in 40 CFR part 1065, subpart H; we will approve your request if you show us that it does not affect your ability to demonstrate compliance with the applicable emission standards. If your locomotive uses sulfur-sensitive technology, you may not use an in-use fuel that has a lower sulfur content than the range specified for the otherwise applicable test fuel in 40 CFR part 1065. If your locomotive does not use sulfur-sensitive technology, we may allow you to use an in-use fuel that has a lower sulfur content than the range specified for the otherwise applicable test fuel in 40 CFR part 1065, but may require that you correct PM emissions to account for the sulfur differences.

(3) For service accumulation, use the test fuel or any commercially available fuel that is representative of the fuel that in-use locomotives will use.

(f) See §1033.505 for information about allowable ambient testing conditions for testing.

(g) This subpart is addressed to you as a manufacturer/renmanufacturer, but it applies equally to anyone who does testing for you, and to us when we perform testing to determine if your locomotives meet emission standards.

(h) We may also perform other testing as allowed by the Clean Air Act.

(i) For passenger locomotives that can generate hotel power from the main propulsion engine, the locomotive must comply with the emission standards when in non-hotel setting. For hotel mode, the locomotive is subject to the notch cap provisions of §1033.101 and the defeat device prohibition of §1033.115.

§1033.505 Ambient conditions.

This section specifies the allowable ambient conditions (including temperature and pressure) under which testing may be performed to determine compliance with the emission standards of §1068.101. Manufacturers/renmanufacturers may ask to perform testing at conditions other than those
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§ 1033.510 Auxiliary power units.

If your locomotive is equipped with an auxiliary power unit (APU) that operates during an idle shutdown mode, you must account for the APU’s emissions rates as specified in this section, unless the APU is part of an AESS system that was certified separately from the rest of the locomotive. This section does not apply for auxiliary engines that only provide hotel power.

(a) Adjust the locomotive main engine’s idle emission rate (g/hr) as specified in §1033.530. Add the APU emission rate (g/hr) that you determine under paragraph (b) of this section. Use the locomotive main engine’s idle power as specified in §1033.530.

(b) Determine the representative emission rate for the APU using one of the following methods.

(1) Installed APU tested separately. If you separately measure emission rates (g/hr) for each pollutant from the APU installed in the locomotive, you may use the measured emissions rates (g/hr) as the locomotive’s idle emissions rates when the locomotive is shutdown and the APU is operating. For all testing other than in-use testing, apply appropriate deterioration factors to the measured emission rates. You may ask to carryover APU emission data for a previous test, or use data for the same APU installed on locomotives in another engine family.

(2) Uninstalled APU tested separately. If you separately measure emission rates (g/hr) over an appropriate duty-cycle for each pollutant from the APU when it is not installed in the locomotive, you may use the measured emissions rates (g/hr) as the locomotive’s idle emissions rates when the locomotive is shutdown and the APU is...