FINAL

California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-D

Date of Hearing: August 27, 2020
State of California

AIR RESOURCES BOARD

FINAL

California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines

PART I-D

Adopted: October 20, 2005
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Amended: September 9, 2021

NOTE: The source for this document is Part 1039 of the “California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-D” (Part I-D), as last amended October 25, 2012. This document is incorporated by reference in Title 13, California Code of Regulations, Section 2421(a)(4)(B). The proposed modifications to this document are principally incorporated from 40 Code of Federal Regulations (CFR) part 1039, Subpart G - Special Compliance Provisions, last amended October 25, 2016, revised to conform to CARB’s legal conventions and authority. All language is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text and deletions are indicated by strikeout. California provisions that replace specific federal provisions are denoted by the words “DELETE” for the federal language and “REPLACE WITH” or “ADD” for the California language. Only those portions containing the suggested modifications from the existing provisions are included. All other portions remain unchanged and are indicated by the symbol “* * * * *” for reference. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

Date of Hearing: August 27, 2020
Table of Contents

PART 1039 – CONTROL OF EMISSIONS FROM NEW AND IN-USE OFF-ROAD COMPRESSION-IGNITION ENGINES

Subpart A – Overview and Applicability

§ 1039.1 Does this part apply for my engines?
§ 1039.2 Who is responsible for compliance?
§ 1039.5 Which engines are excluded from this part’s requirements?
§ 1039.10 How is this part organized?
§ 1039.15 Do any other regulation parts apply to me?
§ 1039.20 What requirements from this part apply to excluded stationary engines?
§ 1039.30 Submission of information.

Subpart B – Emission Standards and Related Requirements

§ 1039.101 What exhaust emission standards must my engines meet after the 2014 model year?
§ 1039.102 What exhaust emission standards and phase-in allowances apply for my engines in model year 2014 and earlier?
§ 1039.104 Are there interim provisions that apply only for a limited time?
§ 1039.105 What smoke standards must my engines meet?
§ 1039.107 What evaporative emission standards and requirements apply?
§ 1039.110 [Reserved]
§ 1039.115 What other requirements apply?
§ 1039.120 What emission-related warranty requirements apply to me?
§ 1039.125 What maintenance instructions must I give to buyers?
§ 1039.130 What installation instructions must I give to equipment manufacturers?
§ 1039.135 How must I label and identify the engines I produce?
§ 1039.140 What is my engine’s maximum engine power?

Subpart C – Certifying Engine Families

§ 1039.201 What are the general requirements for obtaining an Executive Order?
§ 1039.205 What must I include in my application?
§ 1039.210 May I get preliminary approval before I complete my application?
§ 1039.220 How do I amend the maintenance instructions in my application?

Date of Hearing: August 27, 2020
§ 1039.225  How do I amend my application for certification?
§ 1039.230  How do I select engine families?
§ 1039.235  What testing requirements apply for certification?
§ 1039.240  How do I demonstrate that my engine family complies with exhaust emission standards?
§ 1039.245  How do I determine deterioration factors from exhaust durability testing?
§ 1039.250  What records must I keep and what reports must I send to the Air resources Board (ARB)?
§ 1039.255  What decisions may ARB make regarding my Executive Order?

Subpart D – [Reserved]

Subpart E – In-use Testing

§ 1039.401  General Provisions.

Subpart F – Test Procedures

§ 1039.501  How do I run a valid emission test?
§ 1039.505  How do I test engines using steady-state duty cycles, including ramped-modal testing?
§ 1039.510  Which duty cycles do I use for transient testing?
§ 1039.515  What are the test procedures related to not-to-exceed limits?
§ 1039.520  What testing must I perform to establish deterioration factors?
§ 1039.525  How do I adjust emission levels to account for infrequently regenerating aftertreatment devices?

Subpart G – Special Compliance Provisions

§ 1039.601  What compliance provisions apply to these engines?
§ 1039.615  What special provisions apply to engines using noncommercial fuels?
§ 1039.620  What are the provisions for exempting engines used solely for competition?
§ 1039.625  What requirements apply under the program for equipment-manufacturer flexibility?
§ 1039.626  What special provisions apply to equipment imported under the equipment-manufacturer flexibility program?
§ 1039.627  What are the incentives for equipment manufacturers to use cleaner engines?
§ 1039.630  What are the economic hardship provisions for equipment manufacturers?
§ 1039.635  What are the hardship provisions for engine manufacturers?
§ 1039.640  What special provisions apply to branded engines?

Date of Hearing: August 27, 2020
§ 1039.645 What special provisions apply to engines used for transportation refrigeration units?

§ 1039.650 [Reserved]

§ 1039.660 What special provisions apply to Independent Commercial Importers?

§ 1039.699 Emission standards and certification requirements for 2024 model year and later auxiliary power units for on-road tractors

Subpart H – Averaging, Banking, and Trading for Certification

§ 1039.701 General provisions.

§ 1039.705 How do I generate and calculate emission credits?

§ 1039.710 How do I average emission credits?

§ 1039.715 How do I bank emission credits?

§ 1039.720 How do I trade emission credits?

§ 1039.725 What must I include in my application for certification?

§ 1039.730 What ABT reports must I send to ARB?

§ 1039.735 What records must I keep?

§ 1039.740 What restrictions apply for using emission credits?

§ 1039.745 What can happen if I do not comply with the provisions of this subpart?

Subpart I – Definitions and Other Reference Information

§ 1039.801 What definitions apply to this part?

§ 1039.805 What symbols, acronyms, and abbreviations does this part use?

§ 1039.815 What provisions apply to confidential information?

§ 1039.820 How do I request a hearing?

§ 1039.825 What reporting and recordkeeping requirements apply under this part?

Appendix I to Part 1039 – Reserved

Appendix II to Part 1039 – Steady-state Duty Cycles

Appendix V to Part 1039 – [Reserved]

Appendix VI to Part 1039 – Nonroad Compression-Ignition Composite Transient Cycle

Date of Hearing: August 27, 2020
§ 1039.660 What special provisions apply to Independent Commercial Importers?

ADD:

§ 1039.699 Emission standards and certification requirements for 2024 model year and later auxiliary power units for on-road tractors.

(a) This section specifies the emission standards and certification requirements for 2024 and subsequent model year auxiliary power units (APU) installed on tractors subject to GHG exhaust emission standards specified in title 17, CCR § 95663(a)(2)(B).

(b) You may apply for an Executive Order under this section if you manufacture APUs, or if you install emission control hardware to meet the PM standard in this section.

(c) Exhaust emissions may not exceed a PM standard of 0.02 g/kW-hr, nor exceed the applicable NMHC, NOx, and CO standards in 13 CCR § 2423, when tested using the steady-state test procedures described in subpart F of these test procedures for the duty cycles specified in § 1039.505(b)(1) of these test procedures. Your APUs must meet the exhaust emission standards of this section over the engine’s useful life as specified in title 13 CCR § 2421(a)(61). These emission standards also apply for testing with production and in-use APUs.

Date of Hearing: August 27, 2020
(d) The APU is deemed to have a valid Executive Order under this section if the engine manufacturer certifies the engine under title 13 CCR § 2423 with a PM family emission limit of 0.02 g/kW-hr or less.

(e) The APU may draw power from the installed engine to regenerate a particulate filter, but you must not make any other changes to the certified engine that could reasonably be expected to increase its emissions of any pollutant.

(f) §§ 1039.115, 1039.120, 1039.125, and 1039.130 of these test procedures apply for APUs as written. You must exercise due diligence in ensuring that your system will not adversely affect safety or otherwise violate the prohibition of § 1039.115(f) in these test procedures.

(g) All your APUs are considered to be part of a single emission family; however, you may subdivide your APUs into multiple emission families if you show the expected emission characteristics are different during the useful life. An emission family is analogous to an engine family as described in §1039.230 of these test procedures for the purpose of grouping APU models.

(h) Testing requirements apply for certification as follows:

(1) Select an emission-data APU representing a worst-case condition for PM emissions. Measure emissions from the test engine with the APU installed according to your specifications.

(2) We may require you to provide an engineering analysis showing that the performance of your emission controls will not deteriorate during the useful life with proper maintenance. If we determine that your emission controls are likely to deteriorate during the useful life, we may require you to develop and apply deterioration factors consistent with good engineering judgment.

(3) Collect emission data and round to the nearest 0.01 g/kW-hr for comparing to the standard. Calculate full-life emissions as described in § 1039.240(d) of these test procedures if you need to apply a deterioration factor.

(4) You may ask to use emission data from a previous production period instead of doing new tests as described in § 1039.235(d).

(5) Additional testing provisions apply as described in § 1039.235(c), (e), and (f).

(i) Your APU Executive Order is valid for any engine certified under 13 CCR § 2423, as long as the engine has been certified to a family PM emission limit of 0.02 g/kW-hr or less and has a maximum engine power rating no more than 10 percent greater than the maximum engine power of the engine used for certification testing under this section.

Date of Hearing: August 27, 2020
(j) The following provisions apply for determining whether your APU complies with the requirements of this section:

(1) For purposes of certification, your emission family is considered in compliance with the emission standards of this section if all emission-data APUs representing that family have test results showing compliance with the standards.

(2) Your engine family is deemed not to comply if any emission-data APU representing that family for certification has test results showing a full-life emission level above the PM standard.

(k) At the time of manufacture, affix a permanent and legible label identifying each APU. This applies even if the engine manufacturer certifies a compliant engine as described in paragraph (d) of this section. The label must meet the specifications described in 13 CCR § 2424 and in § 1039.135 of these test procedures. Additionally, the label must:

(1) Include the heading “EMISSION CONTROL INFORMATION”.

(2) Include your full corporate name and trademark.

(3) State: “THIS APU ENGINE COMPLIES WITH 13 CCR § 2423(n).”

(l) [Reserved]

(m) See §§ 1039.201, 1039.210, 1039.220, 1039.225, 1039.250, and 1039.255 of these test procedures for general requirements related to obtaining an Executive Order. Include the following information in your application for certification, unless we ask you to include less information:

(1) Describe the emission family’s specifications and other basic parameters of the APU’s design and emission controls. List each distinguishable configuration in the emission family. For each APU configuration, list the maximum engine power for which the APU is designed to operate.

(2) Explain how the emission control system operates. Identify the part number of each component you describe.

(3) Describe the engines you selected for testing and the reasons for selecting them.

(4) Describe the test equipment and procedures that you used. Also describe any special or alternate test procedures you used.

(5) Describe how you operated the emission-data APU before testing, including any operation to break in the APU or otherwise stabilize emission levels. Describe any scheduled maintenance you performed.

Date of Hearing: August 27, 2020
(6) List the specifications of the test fuel to show that it falls within the required ranges we specify in the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-E, adopted on October 25, 2012.

(7) Include the maintenance and warranty instructions you will provide (see §§ 1039.120 and 1039.125 of these test procedures).

(8) Describe your emission control information label.

(9) Identify the emission family's deterioration factors and describe how you developed them, or summarize your analysis describing why you don't expect performance of emission controls to deteriorate. Present any emission test data you used for this to the Executive Officer.

(10) State that you operated your emission-data APU as described in the application (including the test procedures, test parameters, and test fuels) to show you meet the requirements of this part.

(11) Present emission data for PM.

(12) Report all test results, including those from invalid tests, whether or not they were conducted according to the test procedures of subpart F of this part. We may ask you to send other information to confirm that your tests were valid under the requirements of this part and the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-E, adopted October 25, 2012.

(13) Describe any adjustable operating parameters as described in § 1039.205(s) of these test procedures.

(14) Unconditionally certify that all the APUs in the emission family comply with the requirements of this part and 13 CCR §§ 2420-2427.

(15) Provide additional information if requested by the Executive Officer to evaluate your application.

(16) Name an agent for service located in California. Service on this agent constitutes service on you or any of your officers or employees for any action by CARB related to the requirements of this part.

(n) If a tractor manufacturer installs an APU from you that is not properly certified and labeled, you are presumed to have caused the violation (see § 1068.101(c) of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-E, adopted October 25, 2012).

Date of Hearing: August 27, 2020
Tier 4 Off-Road Compression-Ignition Engines, Part I-F, last amended October 25, 2012).

Subpart H – Averaging, Banking, and Trading for Certification

Subpart I – Definitions and Other Reference Information

§ 1039.801 What definitions apply to this part?

ADD (In Alphabetical Order):

* Auxiliary power unit means a device installed on a vehicle that uses an engine to provide power for purposes other than to (directly or indirectly) propel the vehicle.*