State of California
AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2004 AND SUBSEQUENT MODEL HEAVY-DUTY OTTO-CYCLE ENGINES AND VEHICLES

Adopted:	December 27, 2000
Amended:	December 12, 2002
Amended:	July 26, 2007
Amended:	October 17, 2007
Amended:	September 27, 2010
Amended:	March 22, 2012
Amended:	December 6, 2012
Amended:	April 18, 2013 (Corrected by Section 100)
Amended:	October 21, 2014
Amended:	September 2, 2015
Amended:	September 1, 2017
Amended:	December 19, 2018

NOTE: This document is incorporated by reference in section 1956.8(d), title 13, California Code of Regulations (CCR) and also incorporates by reference various sections of Title 40, Part 86 of the Code of Federal Regulations, with some modifications. It contains the majority of the requirements necessary for certification of heavy-duty Otto-cycle engines for sale in California, in addition to containing the exhaust emissions standards and test procedures for these Otto-cycle engines.[1] The section numbering conventions for this document are set forth in subparagraph 4 on page 4. Reference is also made in this document to other California-specific requirements that are necessary to complete an application for certification. These other documents are designed to be used in conjunction with this document. They include:

1. "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," (incorporated by reference in section 1976, title 13, CCR);

2. Warranty requirements (sections 2035, et seq., title 13, CCR);

3. OBD II (section 1968, et seq., title 13, CCR, as applicable);

4. "California Test Procedures for Evaluating Substitute Fuels and New Clean Fuels through 2014," (incorporated by reference in section 2317, title 13, CCR); and

5. "California Test Procedures for Evaluating Substitute Fuels and New Clean Fuels in 2015 and Subsequent Years," (incorporated by reference in (section 2317, title 13, CCR).

[1] The requirements for Otto-cycle engines used in complete vehicles up to 14,000 pounds GVW are contained in the "California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," (incorporated by reference in §1961(d), title 13, CCR and the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," (incorporated by reference in section 1961.2, title 13, CCR .

TABLE OF CONTENTS

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2004 AND SUBSEQUENT MODEL HEAVY-DUTY OTTO-CYCLE ENGINES AND VEHICLES

The following provisions of Subparts A, N, and P, Part 86, of Subparts A through I, Part 1036, of Subparts A through L, Part 1065, and of Subparts A and E, Part 1068, Title 40, Code of Federal Regulations (CFR), as adopted or amended by the U.S. Environmental Protection Agency on the date set forth next to the 40 CFR Part 86 section listed below, and only to the extent they pertain to the testing and compliance of exhaust emissions from heavy-duty Otto-cycle engines, are adopted and incorporated herein by this reference as the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles," with the following exceptions and additions.

Part I. GENERAL PROVISIONS FOR CERTIFICATION AND IN-USE VERIFICATION OF EMISSIONS

§86.1 Incorporation by reference. October 25, 2016.

Subpart A - General Provisions for Heavy-Duty Engines and Heavy Duty Vehicles.

1. General Applicability. **[§86.xxx-1]**

A. Federal provisions.

1. §86.001-1. October 6, 2000.

1.1 Subparagraph (a). [No change.]

1.2 Delete subparagraph (b) and replace with the following: A manufacturer must certify any complete heavy-duty vehicle of 14,000 pounds gross vehicle weight rating or less in accordance with the medium-duty vehicle provisions contained in the "California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," incorporated herein by reference. Heavy-duty engine or vehicle provisions of subpart A do not apply to such a vehicle.

1.3 Subparagraph (c). [n/a (ADP for LDVs)]

1.4 Subparagraph (d). [n/a (NLEVs)]

1.5 Amend subparagraph (e) as follows: *Small volume manufacturers.* Special certification procedures are available for any manufacturer whose projected or actual combined California sales of passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines in its product line are fewer than 4,500 units based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification. For a manufacturer certifying for the first time in California, model-year production shall be based on projected California sales. The small

volume manufacturer's heavy-duty engine certification procedures are described in 40 CFR §86.098-14.

1.6 Subparagraph (f). [n/a; exhaust opacity refers to diesel engines.]

2. §86.005-1 October 6, 2000.

2.1 Subparagraph (a). [No change.]

2.2 Delete subparagraph (b) and replace with the following: A manufacturer must certify any complete heavy-duty vehicle of 14,000 pounds gross vehicle weight rating or less and any 2020 and subsequent model incomplete heavy-duty vehicle of 10,000 pounds gross vehicle weight rating or less in accordance with the medium-duty vehicle provisions contained in the "California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," incorporated by reference in §1961(d), title 13, CCR or the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," incorporated by reference in section 1961.2, title 13, CCR, as applicable. Heavy-duty engine or vehicle provisions of subpart A do not apply to such a vehicle.

2.3 Subparagraph (c). [No change.]

2.4 Subparagraph (d). [Reserved.]

2.5 Amend subparagraph (e) as follows: *Small volume manufacturers.* Special certification procedures are available for any manufacturer whose projected or actual combined California sales of passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines in its product line are fewer than 4,500 units based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification. For a manufacturer certifying for the first time in California, model-year production shall be based on projected California sales. The small volume manufacturer's heavy-duty engine certification procedures are described in 40 CFR §86.098-14.

2.6 Subparagraph (f). [n/a; exhaust opacity refers to diesel engines.]

3. §86.016-1 October 25, 2016.

3.1 Subparagraph (a). Amend as follows:

3.1.1 Subparagraph (1). [No change.]

3.1.2 Subparagraphs (2) and (3). Delete and replace with the following: A manufacturer must certify any complete heavy-duty vehicle of 14,000 pounds gross vehicle weight rating or less and any 2020 and subsequent model incomplete heavy-duty vehicle of 10,000 pounds gross vehicle weight rating or less in accordance with the medium-duty vehicle provisions contained in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," incorporated by reference in section 1961.2, title 13, CCR, as

applicable. Heavy-duty engine or vehicle provisions of subpart A do not apply to such a vehicle.

3.1.3 Subparagraph (4). Delete and replace with the following: The provisions of this subparagraph are contained the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles."

3.1.4 Subparagraph (5). Delete and replace with the following: All heavy-duty engines and vehicles are subject to the on-board diagnostic system requirements in section 1968 et seq., title 13, CCR, as applicable.

3.2 Subparagraph (b). [No change.]

3.3 Subparagraph (c). *Greenhouse gas emission standards.* Delete and replace with the following: See 40 CFR parts 1036 and 1037 for greenhouse gas emission standards that apply for heavy-duty engines and vehicles, as modified by these test procedures.

3.4 Subparagraph (d). *Non-petroleum fueled vehicles.* Delete and replace with the following: The standards and requirements of this part apply to non-petroleum fueled motor vehicles, as described in subsection B. of this section.

3.5 Amend subparagraph (e) as follows: *Small volume manufacturers.* Special certification procedures are available for any manufacturer whose projected or actual combined California sales of passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines in its product line are fewer than 4,500 units based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification. For a manufacturer certifying for the first time in California, model-year production shall be based on projected California sales. To certify its product line under these optional procedures, the small volume manufacturer must first obtain the Executive Officer's approval. The manufacturer must meet the eligibility criteria specified in 40 CFR §86.094-14(b) before the Executive Officer's approval will be granted. The small volume manufacturer's heavy-duty engine certification procedures are described in 40 CFR §86.098-14.

3.6 Subparagraph (f). [n/a; exhaust opacity refers to diesel engines.]

3.7 Subparagraph (g). [n/a; alternative fuel conversions.]

3.8 Subparagraph (h). [No change.]

B. California provisions.

1. These regulations are applicable to all heavy-duty Otto-cycle methanol-fueled, ethanol-fueled, natural-gas-fueled and liquefied-petroleum-gas-fueled dedicated, dual-fuel and multi-fuel engines (and vehicles) except those engines derived from existing diesel engines. For any engine which is not a distinctly Otto-cycle engine nor derived from such, the Executive Officer shall determine whether the engine shall be subject to these regulations or alternatively to the heavy-duty diesel engine regulations, in consideration of the relative similarity of the engine's torque-speed characteristics and vehicle applications with those of Otto-cycle and diesel engines. Reference to dual-fuel vehicles or engines shall also

mean bi-fuel vehicles or engines. For guidance on classifying 2021 and subsequent model heavy heavy-duty Otto-cycle engines, used in vehicles which normally exceed 33,000 pounds GVWR, based on primary intended service class, see 40 CFR §1036.140.

2. References in the federal regulations to light-duty vehicles and light-duty trucks do not apply.

3. Any reference to vehicle sales throughout the United States shall mean vehicles and engines sales in California. Any reference to small volume manufacturer shall mean a California small-volume manufacturer as defined in section I.1.A., above.

4. Regulations concerning U.S. EPA hearings, U.S. EPA inspections, specific language on the Certificate of Conformity, evaporative emissions, high-altitude vehicles and testing, particulate and oxides of nitrogen averaging and test group standards applicable in such averaging, alternative useful life, selective enforcement audit, and Certification Short Test shall not be applicable to these procedures, except where specifically noted. The regulations pertaining to evaporative emissions are contained in "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," as incorporated in §1976, title 13, CCR.

2. Definitions. **[§86.xxx-2]**

A. Federal provisions.

All of the definitions in previous CFR sections continue to apply, except as otherwise noted below. Definitions specific to other requirements such as evaporative emissions are contained in those separate documents.

1. §86.004-2. October 25, 2016.
2. §86.010-2. February 24, 2009.
3. §86.012-2. September 15, 2011.

3.1 Amend paragraph as follows: The definitions of 40 CFR §86.010-2 continue to apply to model year 2010 and later model year engines and vehicles. The definitions listed in this section apply beginning with model year 2012. “GHG Urban Bus” means a passenger-carrying vehicle with a load capacity of fifteen or more passengers and intended primarily for intracity operation, i.e. , within the confines of a city or greater metropolitan area. GHG urban bus operation is characterized by short rides and frequent stops. To facilitate this type of operation, more than one set of quick-operating entrance and exit doors would normally be installed. Since fares are usually paid in cash or tokens, rather than purchased in advance in the form of tickets, GHG urban buses would normally have equipment installed for collection of fares. GHG urban buses are also typically characterized by the absence of equipment and facilities for long distance travel, e.g., rest rooms, large luggage compartments, and facilities for stowing carry-on luggage.

B. California provisions.

“Administrator” means the Executive Officer of the Air Resources Board.

"**ARB**" means Air Resources Board or the Executive Officer of the Air Resources Board.

"**Certificate of Conformity**" means "Executive Order" certifying vehicles for sale in California.

"**Certification**" means certification as defined in Section 39018 of the Health and Safety Code.

"**Designated Compliance Officer**" means the Executive Officer of the Air Resources Board or his or her delegate.

"EPA" means "Air Resources Board" or the Executive Officer of the Air Resources Board.

"**EPA Enforcement Officer**" means the Executive Officer of the Air Resources Board or his or her delegate.

"Medium-Duty Engine" means a heavy-duty engine that is used in a medium-duty vehicle.

"Medium-Duty Vehicle" means any 1992 through 2006 model-year heavy-duty low-emission, ultra-low-emission, super-ultra-low-emission or zero-emission vehicle certified to the standards in section 1960.1(h)(2) having a manufacturer's gross vehicle weight rating of 14,000 pounds or less and any 2000 and subsequent model heavy-duty low-emission, ultra-low-emission, super-ultra-low-emission or zero-emission vehicle certified to the standards in section 1961(a)(1), 1961.2, or 1962 having a manufacturer's gross vehicle weight rating between 8,500 and 14,000 pounds.

"Optional Low NOx Engine" means a 2015 or subsequent model heavy-duty Otto-cycle engine certified to the optional low NOx emission standards, which are below the 0.20 g/bhp-hr emission standard for 2007 and subsequent model engines. The optional low NOx emission standards are 0.10, 0.05, or 0.02 g/bhp-hr.

"Warranty" means the warranty provisions set forth in title 13, California Code of Regulations §2036.

3. Abbreviations. **[§86.xxx-3]**

A. Federal provisions.

1. §86.000-3. October 22, 1996. All federal abbreviations apply, except as otherwise noted below. Abbreviations specific to other requirements are contained in those separate documents.

B. California provisions.

CCR means California Code of Regulations
LEV means low-emission vehicle
ULEV means ultra-low-emission vehicle
SULEV means super-ultra-low-emission vehicle
MDV means medium-duty vehicle

4. Section numbering; construction.
§86.084-4. October 25, 2016. [No change.]

The section numbering convention employed in these test procedures, in order of priority, is I.1.A.1.1. in order to distinguish California procedures and requirements from those of the U.S. EPA. References in these test procedures to specific sections of the Code of Federal Regulations maintain the same numbering system employed in the Code of Federal Regulations. California-only requirements are set forth in a separate subsection. In the beginning of each section the generic notation §86.xxx-1 is used when there is more than one applicable section (or when no versions of the section are being incorporated) to indicate the section being discussed without regard to model year. The years of applicability (denoted generically by "xxx") are added as applicable in the pertinent subsections.

In cases where the entire CFR section is incorporated by reference with no modifications, the notation "[No change.]" is used. In cases where the federal requirements are modified by California requirements, the notation "Amend (or delete) subparagraph (__) as follows:" is used. If the federal requirement is not applicable, the notation "[n/a]" is used. In cases where there are California only requirements, the additional California requirements are noted in a separate subsection with the numbering convention set forth above.

If a CFR section for a specific model year is set forth in this document, and that CFR section references previous CFR sections, then all previously referenced CFR sections are deemed incorporated into this document unless otherwise noted.

5. General Standards; increase in emissions; unsafe conditions. [§86.090-5] November 12, 1996. [No change.]

6. Hearings on certification. **[§86.078-6]** October 25, 2016.

Amend the paragraph as follows: If a manufacturer's request for a hearing is approved, ARB will follow the hearing procedures specified in accordance with title 17, CCR, §60055.1, et seq., with respect to such issue.

7. Maintenance of records; submittal of information; right of entry. [§86.000-7] October 25, 2016. [No change.]

8. Emission standards for light-duty vehicles. **[§86.xxx-8] [n/a]**

9. Emission standards for light-duty trucks. **[§86.xxx-9] [n/a]**

10. Emission standards for Otto-cycle heavy-duty engines and vehicles. **[§86.xxx-10]**

A. Federal provisions.

1. **§86.098-10.** April 30, 2010. Amend as follows:
   - 1.1 Amend subparagraph (a) as follows:
     - 1.1.1 Delete subparagraph (a)(1) and replace with emission standards set forth in Section I.10.B below.]
     - 1.1.2 Subparagraph (a)(2). [No change.]
     - 1.1.3 Subparagraph (a)(3). [No change.]
   - 1.2 Subparagraph (b) [n/a] [See evap TPs]
   - 1.3 Subparagraph (c) [No change.]
   - 1.4 Subparagraph (d) [No change.]
2. **§86.099-10**. [n/a; See evap TPs.]

3. **§86.005-10**. April 28, 2014. Amend as follows:
   3.1 Subparagraph (a): [No change.]
   [See, also emission standards in I.10.B below]
   3.2 Subparagraph (b) [n/a] [See evap TPs]
   3.3 Subparagraph (c) [No change.]
   3.4 Subparagraph (d) [No change.]
   3.5 Subparagraph (e) [No change.]
   3.6 Subparagraph (f) [No change.]
4. **§86.008-10**. October 25, 2016. Amend as follows:
   4.1 Subparagraph (a): [See, also emission standards in I.10.B below]
   4.1.1. Subparagraphs (a) through (a)(1)(ii)(A). [No change.]
   4.1.2. Amend subparagraph (a)(1)(ii)(B) as follows: Nonmethane-hydrocarbon (NMHC) for engines fueled with natural gas or liquefied petroleum gas. 0.14 grams per brake horsepower-hour (0.052 grams per megajoule).
   4.1.3. Subparagraphs (a)(1)(ii)(C) through (a)(4). [No change.]
   4.2 Subparagraph (b) [n/a] [See evap TPs]
   4.3 Subparagraph (c) [No change.]
   4.4 Subparagraph (d) [No change.]
   4.5 Subparagraph (e) [No change.]
   4.6 Subparagraph (f) [No change.]
   4.7 Subparagraph (g) [No change.]

B. California provisions.

1. Exhaust emissions from new 2004 and later model year Otto-cycle medium- and heavy-duty engines, except for Otto-cycle medium- and heavy-duty engines subject to the alternative standards in 40 CFR §86.005-10(f), shall not exceed:

California Emission Standards for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines[A]
(in g/bhp-hr)

Model Year	Emission Category	NMHC + NOx	NMHC	NOx	CO[H]	HCHO	PM
Standards for Heavy-Duty Otto-Cycle Engines Used In 2004 through 2019 Model Medium-Duty Vehicles 8,501 to 10,000 pounds GVW[B] and 2004 and Subsequent Model Medium-Duty Vehicles 10,001 to 14,000 pounds GVW[C]							
2004	ULEV	2.4 **or** 2.5 with 0.5 NMHC cap[D]	n/a	n/a	14.4	0.05	n/a
	SULEV	2.0	n/a	n/a	7.2	0.025	n/a
2005 through 2007[F]	ULEV	1.0[D,F]	n/a	n/a	14.4	0.05	n/a
	SULEV	0.5[D,F]	n/a	n/a	7.2	0.025	n/a
2008 and subsequent[G]	ULEV	n/a	0.14[F]	0.20[F]	14.4	0.01	0.01
	SULEV	n/a	0.07[F]	0.10[F]	7.2	0.005	0.005
Standards for Heavy-Duty Otto-Cycle Engines Used In Heavy-Duty Vehicles Over 14,000 pounds GVW							
2004	n/a	2.4 **or** 2.5 with 0.5 NMHC cap[D]	n/a	n/a	37.1	0.05[E]	n/a
2005 through 2007[F]	n/a	1.0[D,F]	n/a	n/a	37.1	0.05[E]	n/a
2008 and subsequent[G]	n/a	n/a	0.14[F]	0.20[F]	14.4	0.01	0.01
2015 and subsequent[I]	Optional	n/a	0.14	0.10, 0.05, or 0.02	14.4	0.01	0.01

[A] These standards apply to petroleum-fueled, alcohol-fueled, liquefied petroleum gas-fueled and natural gas-fueled Otto-cycle engines. Alcohol-fueled engines have the option of certifying to the organic material hydrocarbon equivalent ("OMHCE") or organic material non-methane hydrocarbon equivalent ("OMNMHCE") standard.

[B] For the 2020 and subsequent model years, medium-duty vehicles 8,501 to 10,000 pounds GVW must certify to the primary emission standards and test procedures for complete vehicles specified in section 1961.2, title 13, CCR.

[C] A manufacturer of engines used in incomplete medium-duty vehicles may choose to comply with these standards as an alternative to the primary emission standards and test procedures for complete vehicles specified in section 1961 or 1961.2, title 13, CCR. A manufacturer that chooses to comply with these optional heavy-duty engine standards and test procedures shall specify, in the Part I application for certification, an in-use compliance test procedure, as provided in section 2139(c), title 13 CCR.

[D] A manufacturer may request to certify to the Option 1 or Option 2 federal NMHC + NOx standards as set forth in 40 CFR §86.005-10(f). However, for engines used in medium-duty vehicles the formaldehyde level must meet the standard specified above.

[E] This standard only applies to methanol-fueled Otto-cycle engines.

[F] A manufacturer may elect to include any or all of its medium- and heavy-duty Otto-cycle engine families in any or all of the emissions ABT programs for HDEs, within the restrictions described in section I.15 of these test procedures. For engine families certified to the Option 1 or 2 federal standards the FEL must not exceed 1.5 g/bhp-hr. If a manufacturer elects to include engine families certified to the 2005 and subsequent model year standards, the NOx plus NMHC FEL must not exceed 1.0 g/bhp-hr. For engine families certified to the 2008 and subsequent model year standards, the FEL is the same as set forth in 40 CFR 86.008-10(a)(1).

[G] A manufacturer may elect to include any or all of its medium- and heavy-duty Otto-cycle engine families in any or all of the emissions ABT programs for HDEs, within the restrictions described in section I.15 of these test procedures.

[H] Idle carbon monoxide: For all Otto-cycle heavy-duty engines utilizing aftertreatment technology, and not certified to the on-board diagnostics requirements of title 13, CCR, §1968, et seq, as applicable, the CO emissions shall not exceed 0.50 percent of exhaust gas flow at curb idle.

[I] Optional Low NOx Emission Standards from Heavy Duty Engines. Manufacturers may choose to produce heavy duty engines that emit less NOx emissions than standard 0.20 g/bhp-hr engines. A manufacturer may not include an engine family certified to the optional NOx emission standards in the ABT programs for NOx but may include it for NMHC.

2. **Optional Standards for Complete and Incomplete Heavy-Duty Vehicles.**

Manufacturers may request to group complete and incomplete heavy-duty vehicles into the same test group as vehicles certifying to the LEV III exhaust emission standards and test procedures specified in title 13, CCR, §1961.2, so long as those complete and incomplete heavy-duty Otto-cycle vehicles meet the most stringent LEV III standards to which any vehicle within that test group certifies.

11. Emission standards for heavy-duty diesel engines and vehicles. **[§86.xxx-11]** [n/a]

12. Alternative certification procedures. **[§86.080-12]** April 17, 1980. [No change.]

13. Alternative durability program. **[§86.xxx-13] [n/a]**

14. Small-volume manufacturers certification procedures. **[§86.xxx-14].**
[Note: A small volume manufacturer shall mean a California small volume manufacturer as defined in Section I.1.A., above. Any reference to 10,000 units shall mean 4,500 units in California based on a three year running average as defined in I.1.A., above.]

1. §86.094-14. October 25, 2016. Amend as follows:

1.1 Subparagraphs (a) through (c)(1) [No change.]

1.2 Amend subparagraph (c)(2) as follows: Small volume manufacturers shall include in their records all of the information that EPA requires in 40 CFR §86.094-21. This information will be considered part of the manufacturer's application for certification. [The last sentence is deleted.]

1.3 Subparagraphs (c)(3) through (c)(3)(ii) [No change.]

1.4 Amend subparagraph (c)(3)(ii)(A) as follows: Manufacturers with aggregated sales of less than 301 motor vehicles and motor vehicle engines per year may use assigned deterioration factors that the Administrator determines and prescribes based on design specifications or sufficient control over design specifications, development data, in-house testing procedures, and in-use experience. [The remainder of the paragraph is the same.]

1.5 Subparagraph (c)(3)(ii)(B) through (c)(7)(i) [No change.]

1.6 Add the following sentence to subparagraph (c)(7)(ii): All running changes that do not adversely affect emissions or the emission control system durability shall be deemed approved unless disapproved by the Executive Officer within 30 days of the implementation of the running change.

1.7 Subparagraph (c)(8) [No change.]

2. §86.095-14. April 30, 2010. [No change.]
3. §86.098-14. April 6, 1994. [No change.]

15. NOx and particulate averaging, trading, and banking for heavy-duty engines. **[§86.xxx-15.]**

A. Federal provisions.

1. §86.004-15. October 6, 2000. [No change.]
2. §86.007-15. January 18, 2001. Amend as follows:

2.1 Subparagraphs (a) through (m)(2): [No change.]

2.2 Subparagraph (m)(3): Delete.

2.3 Subparagraphs (m)(4) through m(10). [No change.]

B. California provisions.

1. A manufacturer may not include an engine family certified to the optional NOx emission standards in the ABT programs for NOx but may include it for NMHC.

16. Prohibition of defeat devices. **§86.004-16.** July 13, 2005. [No change.]

17. Emission control diagnostic system for light-duty vehicles and trucks. [§86.007-17] Delete; replace with: All heavy-duty Otto-cycle engines up to 14,000 pounds GVW must have an on-board diagnostic system as required in section 1968, et seq., title 13, CCR, as applicable.

18. [Reserved.]

19. [Reserved.]

20. Incomplete vehicles, classification**. §86.085-20. January 12, 1983. [No change.]**

21. Application for certification. **[§86.xxx-21]**

A. Federal provisions.

1. §86.004-21. April 28, 2014. [No change.]
2. §86.007-21. April 28, 2014. [No change - diesel only.]

B. California provisions.

For California vehicles not certified exclusively on gasoline or diesel fuel, the manufacturer shall submit projected California sales and fuel economy data nineteen months prior to January 1 of the model year for which the engines are certified.

22. Approval of application for certification; test fleet selections; determinations of parameters subject to adjustment for certifications and Selective Enforcement Audit, adequacy of limits, and physically adjustable ranges**. [§86.094-22]** April 30, 2010. [No change.]

23. Required data. **[§86.xxx-23]**

A. Federal provisions.

1. §86.001-23. April 28, 2014. [No change.]
2. §86.007-23. April 28, 2014. [No change.]

B. California provisions.

1. The data derived from testing to determine the exhaust emission deterioration factors shall be submitted to the Executive Officer for review. If the durability test method is accepted by EPA, it shall also be accepted by ARB, subject to the following condition. If, after certification for the first model year in which the method is used, the Executive Officer determines that a manufacturer's durability test procedures do not conform with good engineering practices, the Executive Officer may require changes to that manufacturer's durability test procedures for subsequent model years. The manufacturer's revised durability test procedures shall be submitted to the Executive Officer for review and approval.

2. In lieu of testing for formaldehyde emissions for certification, a manufacturer may provide a statement in its application for certification that such vehicles comply with the applicable standards. Such a statement must be based on previous emission tests, development tests, or other appropriate information.

24. Test vehicles and engines. **[§86.001-24]** October 22, 1996. [No change.]

25. Maintenance. **[§86.xxx-25]**

1. §86.004-25. October 25, 2016. [No change.]

1.1 Subparagraphs (a) through (b)(6)(ii). [No change.]

1.2 Add the following phrase to the last sentence of subparagraph (b)(6)(iii): … or California Vehicle Code §27156, et seq.

1.3 Subparagraphs (b)(7)(i) and (b)(7)(ii). [No change.]

1.4 Add the following sentence to subparagraph (b)(7)(iii): The Executive Officer may also provide the manufacturer a hearing in accordance with title 17, CCR, §60055.1, et seq., with respect to such issue.

1.5 Subparagraphs (c) through (i). [No change.]

26. Mileage and service accumulation; emission measurements. **[§86.004-26]** April 28, 2014.

27. Special test procedures. **[§86.090-27].** April 11, 1989. [No change.]

28. Compliance with emission standards. **[§86.xxx-28]**

A. Federal provisions.

1. §86.004-28. October 25, 2016. [No change.]

B. California provisions.

1. All dedicated methanol-fueled and fuel-flexible vehicles and engines shall comply with the requirements which are applicable to heavy-duty gasoline-fueled Otto-cycle vehicles and engines, except where otherwise noted. In particular, for fuel-flexible vehicles and engines, a manufacturer's proposed durability demonstration program, as required in sections 86.004-21(b)(5)(i)(A), 86.007-21(b)(5)(i)(A), 86.001-23(b)(1)(ii), and 86.007-23(b)(1)(ii), shall provide for the assessment of the durability of the engine in operation with methanol and gasoline, as well as intermediate mixtures of both fuels. A manufacturer's proposed mileage and service accumulation, as required in section 86.001-24(c), shall be conducted on methanol.

2. For fuel-flexible vehicles and engines, the noted deterioration factors shall be determined from testing conducted with gasoline fuel. However, as an assurance

that fuel-flexible vehicles and engines will comply with applicable exhaust emission standards throughout their useful lives when operated on methanol fuel, the manufacturer shall demonstrate that exhaust emissions tests conducted with methanol fuel at the beginning, middle, and end of the durability service accumulation schedule do not exceed the applicable exhaust emission standards. For certification to be granted, the vehicle or engine may not exceed applicable certification exhaust emission standards.

3. For dual-fuel or multi-fuel gaseous engines and vehicles, the noted deterioration factors shall be determined separately for operation on each type of fuel or combination of fuels that the engine is designed to use. For certification to be granted, the provisions of 86.004-28(c) must be met separately for emissions using each type and combination of fuels.

29. Testing by the Administrator. **[§86.091-29].** April 28, 2014. [No change.]

30. Certification. **[§86.xxx-30].**

1. §86.004-30. April 28, 2014. [No change.]
2. §86.007-30. October 25, 2016. [No change.]

31. Separate certification. **[§86.079-31].** September 8, 1977. [No change.]

32. Addition of a vehicle or engine after certification. **[§86.079-32].** September 8, 1977. [No change.]

33. Changes to a vehicle or engine covered by certification. **[§86.079-33].** September 8, 1977. [No change.]

34. Alternative procedure for notification of additions and changes. **[§86.082-34].** November 2, 1982. [No change.]

35. Labeling. **[§86.xxx-35]**

A. Federal provisions.

1. §86.095-35. October 25, 2016.

1.1 Add the following sentence to the introductory paragraph: The labeling requirements of this section shall apply to all new motor vehicle engines certified according to the provisions of California Health and Safety Code Section 43100.

1.2 Subparagraphs (a)(1) through (a)(3)(iii)(G). [No change.]

1.3 Amend subparagraph (a)(3)(iii)(H) as follows: An unconditional statement of compliance with the appropriate model year California regulations; for example, “This engine conforms to California regulations applicable to XXXX model year new heavy-duty Otto-cycle engines.” It may also state that the engine conforms to any applicable federal or Canadian emission standards for new heavy-duty Otto-cycle engines.

1.4 Subparagraphs (a)(3)(iii)(I) through (i). [No change.]

B. California Provisions

1. For 2004 through 2007 model year engines certified to the optional standards in 40 CFR §86.005-10(f) the following statement shall also be printed on the label, “This engine conforms to the California ULEV standards applicable to 20XX model year Heavy-Duty Otto-Cycle Engines.”

2. For 2015 and subsequent model year Otto- cycle engines certified to the Optional Low NOx Engine emission standards, the label shall contain the following

statement: “This engine conforms to California regulations applicable to XXXX model year heavy-duty Otto-cycle engines and is certified to the Optional Low NOx Engine emission standard of XXX g/bhp-hr.”

36. Submission of vehicle identification numbers. **[§86.079-36] [n/a]**

37. Production vehicles and engines. **[§86.085-37].** October 25, 2016. [No change.]

38. Maintenance instructions. **[§86.xxx-38]**

1. §86.004-38. April 28, 2014.

1.1 Subparagraphs (a) through (f). [No change.]

1.2 Amend subparagraph (g)(1) as follows:

(g) Emission control diagnostic service information:

(1) Manufacturers shall furnish or cause to be furnished to any person engaged in the repairing or servicing of motor vehicles or motor vehicle engines, or the Administrator upon request, any and all information needed to make use of the on-board diagnostic system and such other information, including instructions for making emission-related diagnosis and repairs, including, but not limited to, service manuals, technical service bulletins, recall service information, data stream information, bi-directional control information, and training information, unless such information is protected by section 208(c) of the Act or California Government Code Section 6250, as a trade secret. No such information may be withheld under section 208(c) of the Act or California Government Code Section 6250, if that information is provided (directly or indirectly) by the manufacturer to franchised dealers or other persons engaged in the repair, diagnosing, or servicing of motor vehicles or motor vehicle engines.

1.3 Subparagraphs (g)(2) through (i). [No change.]

2. §86.010-38. April 28, 2014. [No change, except as noted above for §86.004-38 subparagraph (g)(1).]

39. Submission of maintenance instructions. **[§86.079-39]** September 8, 1977. [No change.]

40. Heavy-duty engine rebuilding practices. **[§86.xxx-40]**

1. §86.004-40. January 18, 2001.

1.1 Add the following sentence to the introductory paragraph: Any deviation from the provisions contained in this section is also a prohibited act under the California Vehicle Code §§27156, et seq.

1.2 Subparagraphs (a) through (e). [No change.]

Part II. OTHER REQUIREMENTS; TEST PROCEDURES

Subpart N - Exhaust Test Procedures for Heavy-Duty Engines

86.1301 Scope; applicability. October 25, 2016.
86.1302-84 Definitions. November 16, 1983.
86.1303-84 Abbreviations. November 16, 1983.
86.1304 Section numbering; construction. July 13, 2005.
86.1305 Introduction; structure of subpart. August 8, 2014.
86.1333 Transient test cycle generation. April 28, 2014.

Subpart P - Emission Regulations for New Gasoline-Fueled and Methanol-Fueled Otto-Cycle Heavy-Duty Engines and New Gasoline-Fueled and Methanol-Fueled Otto-Cycle Light-Duty Trucks; Idle Test Procedures.

86.1501 Scope; applicability. June 30, 2008.
86.1502 Definitions. June 30, 2008.
86.1503 Abbreviations. June 30, 2008.
86.1505 Introduction; structure of subpart. June 30, 2008.
86.1506 Equipment required and specifications; overview. June 30, 2008.
86.1509 Exhaust gas sampling system. June 30, 2008.
86.1511 Exhaust gas analysis system. June 30, 2008.
86.1513 Fuel specifications. June 30, 2008.
86.1514 Analytical gases. June 30, 2008.
86.1516 Calibration; frequency and overview. June 30, 2008.
86.1519 CVS calibration. June 30, 2008.
86.1522 Carbon monoxide analyzer calibration. June 30, 2008.
86.1524 Carbon dioxide analyzer calibration. June 30, 2008.
86.1526 Calibration of other equipment. June 30, 2008.
86.1527 Idle test procedure; overview. June 30, 2008.
86.1530 Test sequence; general requirements. June 30, 2008.
86.1537 Idle test run. June 30, 2008.
86.1540 Idle exhaust sample analysis. June 30, 2008.
86.1542 Information required. June 30, 2008.
86.1544 Calculation; idle exhaust emissions. June 30, 2008.

Appendix I to Part 86 - Urban Dynamometer Schedules.

(f)(1) EPA Engine Dynamometer Schedule for Heavy-Duty Gasoline-Fueled Engines. April 29, 1998.

Appendix XII to Part 86 - Tables for Production Compliance Auditing of Heavy-Duty Engines and Heavy-Duty Vehicles, Including Light-Duty Trucks. August 30, 1985. [n/a as applies to light-duty trucks]

PART 1036 – CONTROL OF EMISSIONS FROM NEW AND IN-USE HEAVY-DUTY HIGHWAY ENGINES

Subpart A – Overview and Applicability

1036.1 Does this part apply for my engines? October 25, 2016.

1. Amend subparagraph (a) as follows: Except as specified in 40 CFR § 1036.5, the provisions of this part apply for engines that will be installed in heavy-duty vehicles (including glider vehicles) above 14,000 pounds GVWR for propulsion. These provisions also apply for engines that will be installed in 2019 and earlier model year incomplete heavy-duty vehicles from 8,501 to 10,000 pounds GVWR and in incomplete heavy-duty vehicles from 10,001 to 14,000 pounds GVWR, unless the engine is installed in a vehicle that is covered by an Executive Order under 40 CFR part 86, subpart S.

2. Subparagraph (b). [No change.]

3. Delete subparagraph (c).

4. Subparagraph (d). [No change.]

1036.2 Who is responsible for compliance? October 25, 2016.

1036.5 Which engines are excluded from this part's requirements? October 25, 2016.

1036.10 How is this part organized? October 25, 2016.

1036.15 Do any other regulation parts apply to me? October 25, 2016.

1036.30 Submission of information. October 25, 2016.

1. Amend subparagraph as follows: Send all reports and requests for approval to the ARB Designated Compliance Officer, as follows: Chief, Emissions Compliance, Automotive Regulations and Science Division, California Air Resources Board, 9480 Telstar Avenue, Ste. #4, El Monte, CA 91731.

Subpart B – Emission Standards and Related Requirements

1036.100 Overview of exhaust emission standards. October 25, 2016.

1036.108 Greenhouse gas emission standards. October 25, 2016.

1. Add the following section to the introductory paragraph: Optional Compliance Via the 2014 MY National Heavy-Duty Engine and Vehicle Greenhouse Gas Program. For the 2014 through 2020 model years, a manufacturer may elect to demonstrate compliance with this 40 CFR section, §1036.108, for all of its applicable heavy-duty engines by demonstrating compliance with the 2014 MY National Heavy-Duty Engine and Vehicle Greenhouse Gas Program, if it meets the criteria identified below.

(1) A manufacturer that selects compliance with this option must notify the Executive Officer of that selection, in writing, prior to the start of the applicable model year or December 1, 2014, whichever is later;

(2) The manufacturer must submit to ARB all data that it submitted to U.S**.** Environmental Protection Agency in accordance with the reporting requirements as required under 40 CFR §1036.205, §1036.250, and §1036.730, for demonstrating compliance with the 2014 MY National Heavy-Duty Engine and

Vehicle Greenhouse Gas Program and the U.S. Environmental Protection Agency determination of compliance. With the exception of the 2014 model year, all such data must be submitted within 30 days of receipt of the U.S. Environmental Protection Agency Certificate of Conformity or of the date of submission to the U.S. Environmental Protection Agency, whichever is later, for each model year that a manufacturer selects compliance with this option;

(3) The manufacturer must provide to the Executive Officer separate numbers for each engine family of heavy-duty engines produced and delivered for sale in California each model year and all values used in calculating positive or negative emission credits in 40 CFR §1036.730.

2. Subparagraphs (a) through (a)(1). [No change.]

3. Add the following language to subparagraph (a)(1)(i): As an option, 2017 through 2027 model year heavy-duty Otto-cycle engines, except in all cases engines used in medium-duty vehicles, may be certified to the Optional Low-CO_2 Emission Standard. The CO_2 emissions from engines certified to the Optional Low- CO_2 Emission Standard may not exceed 490 g/hp-hr. Engines certified to the Optional Low-CO_2 Emission Standard must also comply with the applicable CH_4 and N_2O emission standards set forth in subparagraphs (a)(2) and (a)(3), respectively. In addition, engines certified to the Optional Low-CO_2 Emission Standard and participating in the Innovative Technology Regulation set forth in §§2208 and 2208.1 of title 13, CCR are not eligible to participate in the averaging, banking, and trading program, or to generate credits for certification.

4. Subparagraphs (a)(1)(ii) through (f). [No change.]

1036.115 Other requirements. October 25, 2016.

1036.130 Installation instructions for vehicle manufacturers. October 25, 2016.

1. Subparagraphs (a) through (b)(1). [No change.]

2. Delete and replace subparagraph (b)(2), as follows: State “Failing to follow these instructions when installing a certified engine in a heavy-duty motor vehicle violates federal and state law, subject to fines or other penalties as described in the Clean Air Act and California Health and Safety Code.”

3. Subparagraphs (b)(3) through (d). [No change.]

1036.135 Labeling. October 25, 2016.

1. Amend the introductory paragraph as follows: Beginning January 1, 2015, label your engines as described in 40 CFR §86.007-35(a)(3), as modified by these test procedures, with the following additional information:

2. Subparagraph (b) through (d). [No change.]

1036.140 Primary intended service class and engine cycle. October 25, 2016.

1036.150 Interim provisions. October 25, 2016.

Subpart C – Certifying Engine Families

1036.205 What must I include in my application? October 25, 2016.

1. Subparagraphs (a) through (h). [No change.]

2. Amend subparagraph (i) as follows: Unconditionally certify that all the engines in the engine family are built as described and comply with the requirements of this part, other referenced parts of the CFR, and title 13, CCR, section 1956.8. Note that 40 CFR §1036.235 specifies which engines to test to show that engines in the entire family comply with the requirements of this part.

3. Subparagraphs (j) through (n). [No change.]

1036.210 Preliminary approval before certification. October 25, 2016.
1036.225 Amending my application for certification. October 25, 2016.
1036.230 Selecting engine families. October 25, 2016.
1036.235 Testing requirements for certification. October 25, 2016.
1036.241 Demonstrating compliance with greenhouse gas emission standards. October 25, 2016.
1036.250 Reporting and recordkeeping for certification. October 25, 2016.
1036.255 What decisions may ARB make regarding my certificate of conformity? October 25, 2016.

Subpart D – Testing Production Engines

1036.301 Measurements related to GEM inputs in a selective enforcement audit. October 25, 2016.

Subpart E – In-use Testing

1036.401 In-use testing. October 25, 2016.

Subpart F – Test Procedures

1036.501 How do I run a valid emission test? October 25, 2016.
1036.505 Ramped-modal testing procedures. October 25, 2016.
1036.510 Engine data and information for vehicle certification. October 25, 2016.
1036.525 Hybrid engines. October 25, 2016.
1036.530 Calculating greenhouse gas emission rates. October 25, 2016.
1036.535 Determining steady-state engine fuel maps and fuel consumption at idle. October 25, 2016.
1036.540 Determining cycle-average engine fuel maps. October 25, 2016.

Subpart G – Special Compliance Provisions

1036.601 What compliance provisions apply? October 25, 2016.

1. Subparagraphs (a) through (a)(2). [No change.]

2. Amend subparagraph (a)(3) as follows: The warranty-related prohibitions in title 13, CCR, sections 2035, 2036, 2037, 2039, 2040, 2041, and 2042, apply to manufacturers of new heavy-duty highway engines in addition to the prohibitions described in 40 CFR 1068.101(b)(6).

3. Subparagraphs (a)(4) through (d). [No change.]

1036.605 GHG exemption for engines used in specialty vehicles. October 25, 2016.
1036.610 Off-cycle technology credits and adjustments for reducing greenhouse gas emissions. October 25, 2016.

1. Subparagraphs (a) through (c). [No change.]

2. Amend subparagraph (d) as follows: We may seek public comment on your request. However, we will generally not seek public comment on credits/adjustments based on A to B engine dynamometer testing, chassis testing, or in-use testing.

3. Subparagraph (e). [No change.]

1036.615 Engines with Rankine cycle waste heat recovery and hybrid powertrains. October 25, 2016.
1036.620 Alternate CO_2 standards based on model year 2011 compression-ignition engines. [n/a; diesel]
1036.625 In-use compliance with family emission limits (FELs). October 25, 2016.
1036.630 Certification of engine GHG emissions for powertrain testing. October 25, 2016.

Subpart H – Averaging, Banking, and Trading for Certification

1036.701 General provisions. October 25, 2016.

1. Add the following language to subparagraph (a): Engines certified to the Optional Low-CO_2 Emission Standards pursuant to 40 CFR §1036.108, as amended September 15, 2011, which is hereby incorporated herein, as modified by these test procedures, and participating in the Innovative Technology Regulation set forth in §§2208 and 2208.1 of title 13, CCR may not generate credits or participate in the averaging, banking, and trading provisions of this subpart.

2. Subparagraphs (b) through (j). [No change.]

1036.705 Generating and calculating emission credits. October 25, 2016.
1036.710 Averaging. October 25, 2016.
1036.715 Banking. October 25, 2016.
1036.720 Trading. October 25, 2016.
1036.725 What must I include in my application for certification? October 25, 2016.
1036.730 ABT reports. October 25, 2016.
1036.735 Recordkeeping. October 25, 2016.
1036.740 Restrictions for using emission credits. October 25, 2016.
1036.745 End-of-year CO_2 credit deficits. October 25, 2016.
1036.750 What can happen if I do not comply with the provisions of this subpart? October 25, 2016.
1036.755 Information provided to the Department of Transportation. [n/a]

Subpart I – Definitions and Other Reference Information

1036.801 Definitions. October 25, 2016.

A. Federal Provisions. [All federal definitions apply, except as otherwise noted below.]

B. California Provisions.

"2014 MY National Heavy-Duty Engine and Vehicle Greenhouse Gas Program" means the national program that applies to new 2014 through 2020 model medium- and heavy-duty engines and vehicles to control greenhouse gas emissions, as adopted by the U.S. Environmental Protection Agency (76 Fed. Reg. 57106 (September 15, 2011)), and as subsequently amended on June 17, 2013, as incorporated in and amended by these test procedures.

"Certificate of Conformity" means an Executive Order certifying engines for sale in California.

"Certification" means relating to the process of obtaining an Executive Order for an engine family that complies with the emission standards and requirements in this part.

"Designated Compliance Officer" means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

"Designated Enforcement Officer" means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

"EPA" shall also mean Air Resources Board or Executive Officer of the Air Resources Board.

"Manufacturer" means any person who manufactures or assembles an engine, vehicle, or piece of equipment for sale in California or otherwise introduces a new engine into commerce in California. This includes importers who import engines or vehicles for resale.

"U.S. Environmental Protection Agency" means the United States Environmental Protection Agency.

"We (us, our)" means the Executive Officer and any authorized representatives.

1036.805 Symbols, acronyms, and abbreviations. June 30, 2017.

A. Federal Provisions. [No change.]

B. California Provisions.

ARB means Air Resources Board.

1036.810 Incorporation by reference. October 25, 2016.

1036.815 Confidential information. October 25, 2016.

A. Federal Provisions. [No change.]

B. California Provisions. The provisions of title 17, CCR section 91000 through 91022 apply for information you consider confidential. Note that according to section 91011, emissions data shall not be identified as confidential.

1036.820 Requesting a hearing. October 25, 2016.

1. Delete subparagraph (a) and replace as follows: You may request a hearing under certain circumstances, as described elsewhere in this part.

2. Subparagraph (b). [No change.]

3. Amend subparagraph (c) as follows: If we agree to hold a hearing, we will use the procedures specified in 17 CCR sections 60055.1 through 60055.43.

1036.825 Reporting and recordkeeping requirements. October 25, 2016.

1. Subparagraphs (a) through (d). [No change.]

2. Delete subparagraph (e).

Appendix I to Part 1036 – Default Engine Fuel Maps for 40 CFR § 1036.540

PART 1065 – ENGINE-TESTING PROCEDURES.

Subpart A – Applicability and General Provisions.

1065.1 Applicability. April 28, 2014.

1. Amend subparagraph (a) as follows:
   1.1. Introductory paragraph. [No change.]
   1.2. Subparagraphs (a)(1). [n/a]
   1.3. Amend subparagraph (a)(2) as follows: Model year 2010 and later heavy-duty highway engines we regulate under title 13, CCR, §1956.8. For earlier model years, manufacturers may use the test procedures in this part or those specified in 40 CFR part 86, subpart N, according to §1065.10, as modified by these test procedures.
   1.4. Subparagraphs (a)(3) through (a)(8). [n/a]
2. Subparagraph (b). [n/a]
3. Subparagraph (c) through (h). [No change.]

1065.2 Submitting information to ARB under this part. April 28, 2014.

1. Subparagraphs (a) through (d). [No change.]
2. Amend subparagraph (e) as follows: See title 17, CCR, section 91011 for provisions related to confidential information. Note that according to this section, emission data shall not be identified as confidential.
3. Subparagraph (f). [No change.]

1065.5 Overview of this part 1065 and its relationship to the standard-setting part. October 30, 2009.
1065.10 Other procedures. October 25, 2016.
1065.12 Approval of alternate procedures. April 28, 2014.
1065.15 Overview of procedures for laboratory and field testing. October 25, 2016.

1. Subparagraphs (a) through (a)(2)(ii). [No change.]
2. Delete subparagraph (a)(2)(iii).
3. Subparagraphs (a)(2)(iv) through (f). [No change.]

1065.20 Units of measure and overview of calculations. April 28, 2014.
1065.25 Recordkeeping. April 28, 2014.

Subpart B – Equipment Specifications.

1065.101 Overview. June 30, 2008.
1065.110 Work inputs and outputs, accessory work, and operator demand. June 30, 2008.
1065.120 Fuel properties and fuel temperature and pressure. June 30, 2008.
1065.122 Engine cooling and lubrication. June 30, 2008.
1065.125 Engine intake air. September 15, 2011.
1065.127 Exhaust gas recirculation. July 13, 2005.
1065.130 Engine exhaust. April 28, 2014.

1065.140 Dilution for gaseous and PM constituents. October 25, 2016.
1065.145 Gaseous and PM probes, transfer lines, and sampling system components. April 28, 2014.
1065.150 Continuous sampling. July 13, 2005.
1065.170 Batch sampling for gaseous and PM constituents. October 25, 2016.
1065.190 PM-stabilization and weighing environments for gravimetric analysis. September 15, 2011.
1065.195 PM-stabilization environment for in-situ analyzers. June 30, 2008.

Subpart C – Measurement Instruments.

1065.201 Overview and general provisions. April 28, 2014.
1065.202 Data updating, recording, and control. October 25, 2016.
1065.205 Performance specifications for measurement instruments. April 28, 2014.

Measurement of Engine Parameters and Ambient Conditions

1065.210 Work input and output sensors. April 28, 2014.
1065.215 Pressure transducers, temperature sensors, and dewpoint sensors. June 30, 2008.

Flow-Related Measurements

1065.220 Fuel flow meter. October 25, 2016.
1065.225 Intake-air flow meter. October 25, 2016.
1065.230 Raw exhaust flow meter. April 28, 2014.
1065.240 Dilution air and diluted exhaust flow meters. April 28, 2014.
1065.245 Sample flow meter for batch sampling. July 13, 2005.
1065.247 Diesel exhaust fluid flow rate. [n/a]
1065.248 Gas divider. July 13, 2005.

CO and CO_2 Measurements

1065.250 Nondispersive infra-red analyzer. April 28, 2014.

Hydrocarbon Measurements

1065.260 Flame ionization detector. October 25, 2016.
1. Subparagraphs (a) through (e). [No change.]
2. Delete subparagraph (f).
3. Subparagraph (g). [No change.]

1065.265 Nonmethane cutter. September 15, 2011.
1065.266 Fourier transform infrared analyzer. October 25, 2016
1. Amend subparagraph (a) as follows: Application. For engines that run only on natural gas, you may use a Fourier transform infrared (FTIR) analyzer to

measure nonmethane hydrocarbon (NMHC) for continuous sampling. You may use an FTIR analyzer with any gaseous-fueled engine, including dual-fuel engines, to measure CH_4, for either batch or continuous sampling (for subtraction from THC).

2. Subparagraph (b). [No change.]

3. Amend subparagraph (c) as follows: Hydrocarbon species for NMHC additive determination. To determine NMHC, measure ethane in addition to those same hydrocarbon species. Determine NMHC as described in 40 CFR §1065.660(b)(4).

4. Amend subparagraph (d) as follows: NMHC CH_4 determination from subtraction of CH_4 from THC. Determine CH_4 as described in 40 CFR §1065.660(d)(2). Determine NMHC from subtraction of CH_4 from THC as described in 40 CFR §1065.660(b)(3). Determine CH_4 as described in 40 CFR §1065.660(d)(2).

5. Subparagraph (e). [No change.]

1065.267 Gas chromatograph with a flame ionization detector. October 25, 2016.
1065.269 Photoacoustic analyzer for ethanol and methanol. April 28, 2014.

NOx Measurements

1065.270 Chemiluminescent detector. April 28, 2014.
1065.272 Nondispersive ultraviolet analyzer. April 28, 2014.
1065.275 N_2O measurement devices. October 25, 2016.

O_2 Measurements

1065.280 Paramagnetic and magnetopneumatic O_2 detection analyzers. April 28, 2014.

Air-to Fuel Ratio Measurements

1065.284 Zirconia (ZrO_2) analyzer. April 28, 2014.

PM Measurements

1065.290 PM gravimetric balance. November 8, 2010.
1065.295 PM inertial balance for field-testing analysis. April 28, 2014.

Subpart D – Calibrations and Verifications.

1065.301 Overview and general provisions. July 13, 2005.
1065.303 Summary of required calibration and verifications. October 25, 2016.
1065.305 Verifications for accuracy, repeatability, and noise. April 28, 2014.
1065.307 Linearity verification. April 28, 2014.

1065.308 Continuous gas analyzer system-response and updating-recording verification – for gas analyzers not continuously compensated for other gas species. April 28, 2014.
1065.309 Continuous gas analyzer system-response and updating-recording verification – for gas analyzers continuously compensated for other gas species. April 28, 2014.

Measurement of Engine Parameters and Ambient Conditions

1065.310 Torque calibration. April 28, 2014.
1065.315 Pressure, temperature, and dewpoint calibration. April 28, 2014.

Flow-Related Measurements

1065.320 Fuel-flow calibration. July 13, 2005.
1065.325 Intake-flow calibration. July 13, 2005.
1065.330 Exhaust-flow calibration. July 13, 2005.
1065.340 Diluted exhaust flow (CVS) calibration. October 25, 2016.
1065.341 CVS, PFD, and batch sampler verification (propane check). October 25, 2016.
1065.342 Sample dryer verification. April 30, 2010.
1065.345 Vacuum-side leak verification. October 25, 2016.

CO and CO_2 Measurements

1065.350 H_2O interference verification for CO_2 NDIR analyzers. April 28, 2014.
1065.355 H_2O and CO_2 interference verification for CO NDIR analyzers. April 28, 2014.

Hydrocarbon Measurements

1065.360 FID optimization and verification. October 25, 2016.
1. Subparagraphs (a) through (a)(2). [No change.]
2. Delete subparagraph (a)(3).
3. Subparagraphs (b) through (d). [No change.]
4. Delete subparagraph (f).

1065.362 Non-stoichiometric raw exhaust FID O_2 interference verification. April 28, 2014.
1065.365 Nonmethane cutter penetration fractions. October 25, 2016.
1065.366 Interference verification for FTIR analyzers. October 25, 2016
1. Amend subparagraph (a) as follows: Scope and frequency. If you measure CH_4 or NMHC using an FTIR analyzer, verify the amount of interference after initial analyzer installation and after major maintenance.
2. Subparagraph (b). [No change.]

3. Amend subparagraph (c) as follows: System requirements. An FTIR analyzer must have combined interference that is within ±2% of the flow-weighted mean concentration of CH_4 or NMHC expected at the standard, though we strongly recommend a lower interference that is within ±1%.

4. Subparagraph (d). [No change.]

1065.369 H_2O, CO, and CO_2 interference verification for photoacoustic alcohol analyzers. April 28, 2014.

NOx Measurements

1065.370 CLD CO_2 and H_2O quench verification. October 25, 2016.
1065.372 NDUV analyzer HC and H_2O interference verification. September 15, 2011.
1065.375 Interference verification for N_2O analyzers. October 25, 2016.
1065.376 Chiller NO_2 penetration. April 28, 2014.
1065.378 NO_2-to-NO converter conversion verification. September 15, 2011.

PM Measurements

1065.390 PM balance verifications and weighing process verification. October 25, 2016.
1065.395 Inertial PM balance verifications. July 13, 2005.

Subpart E – Engine Selection, Preparation, and Maintenance.

1065.401 Test engine selection. July 13, 2005.
1065.405 Test engine preparation and maintenance. April 28, 2014.
1065.410 Maintenance limits for stabilized test engines. February 19, 2015.
1065.415 Durability demonstration. June 30, 2008.

Subpart F – Performing an Emission Test in the Laboratory.

1065.501 Overview. April 28, 2014.
1065.510 Engine mapping. October 25, 2016.
1065.512 Duty cycle generation. April 28, 2014.
1065.514 Cycle-validation criteria for operation over specified duty cycles. September 15, 2011.
1065.516 Sample system decontamination and preconditioning. April 28, 2014.
1065.518 Engine preconditioning. April 28, 2014.
1065.520 Pre-test verification procedures and pre-test collection. April 28, 2014.
1065.525 Engine starting, restarting, and shutdown. September 15, 2011.
1065.526 Repeating void modes or test intervals. April 28, 2014.
1065.530 Emission test sequence. April 28, 2014.
1065.545 Verification of proportional flow control for batch sampling. April 28, 2014.

1065.546 Verification of minimum dilution ratio for PM batch sampling. October 25, 2016.
1065.550 Gas analyzer range verification and drift verification. April 28, 2014.
1065.590 PM sampling media (e.g., filters) preconditioning and tare weighing. October 25, 2016.
1065.595 PM sample post-conditioning and total weighing. June 30, 2008.

Subpart G – Calculations and Data Requirements.

1065.601 Overview. April 28, 2014.
1065.602 Statistics. October 25, 2016.
1065.610 Duty cycle generation. October 25, 2016.
1065.630 Local acceleration of gravity. April 28, 2014.
1065.640 Flow meter calibration calculations. October 25, 2016.
1065.642 SSV, CFV, and PDP molar flow rate calculations. October 25, 2016.
1065.644 Vacuum-decay leak rate. April 28, 2014.
1065.645 Amount of water in an ideal gas. October 25, 2016.
1065.650 Emission calculations. October 25, 2016.

1. Subparagraphs (a) through (c)(5). [No change.]
2. Delete subparagraph (c)(6).
3. Subparagraphs (d) through (h). [No change.]

1065.655 Chemical balances of fuel, intake air, and exhaust. October 25, 2016.
1065.659 Removed water correction. April 28, 2014.
1065.660 THC, NMHC, and CH_4 determination. October 25, 2016.

1. Subparagraphs (a) through (a)(2). [No change.]
2. Delete subparagraph (a)(3).
3. Subparagraphs (a)(4) through (b).
4. Delete subparagraph (c).
5. Subparagraph (d). [No change.]
6. Delete subparagraph (e).

1065.665 THCE and NMHCE determination. October 25, 2016.
1065.667 Dilution air background emission correction. October 25, 2016.
1065.670 NOx intake-air humidity and temperature corrections. September 15, 2011.
1065.672 Drift correction. April 30, 2010.
1065.675 CLD quench verification calculations. October 25, 2016.
1065.680 Adjusting emission levels to account for infrequently regenerating aftertreatment devices. October 25, 2016
1065.690 Buoyancy correction for PM sample media. October 25, 2016.
1065.695 Data requirements. April 28, 2014.

Subpart H – Engine Fluids, Test Fuels, Analytical Gases and Other Calibration Standards.

1065.701 General requirements for test fuels. April 28, 2014.

A. Federal provisions.

1. Subparagraph (a). [No change.]

2. Amend subparagraph (b) as follows: *Fuels meeting alternative specifications.* We may allow you to use a different test fuel if you show us and we find that using it does not affect your ability to comply with all applicable emission standards using commercially available fuels.

3. Subparagraphs (c) through (f). [No change.]

B. California provisions.

Identification of New Clean Fuels to be Used in Certification Testing. Any person may petition the state board to establish by regulation certification testing specifications for a new clean fuel for which specifications for the new clean fuel are not specifically set forth in 40 CFR Part 1065, subpart H as amended herein. Prior to adopting such specifications, the state board shall consider the relative cost-effectiveness of use of the fuel in reducing emissions compared to the use of other fuels. Whenever the state board adopts specifications for a new clean fuel for certification testing, it shall also establish by regulation specifications for the fuel as it is sold commercially to the public.

(a) If the proposed new clean fuel may be used to fuel existing motor vehicles, the state board shall not establish certification specifications for the fuel unless the petitioner has demonstrated that:

(1) Use of the new clean fuel in such existing motor vehicles would not increase emissions of NMHC, NOx, and CO, and the potential risk associated with toxic air contaminants, as determined pursuant to the procedures set forth in the "California Test Procedures for Evaluating Substitute Fuels and New Clean Fuels through 2014" or the "California Test Procedures for Evaluating Substitute Fuels and New Clean Fuels in 2015 and Subsequent Years," as applicable. In the case of fuel-flexible vehicles or dual-fuel vehicles that were not certified on the new clean fuel but are capable of being operated on it, exhaust and evaporative emissions from the use of the new clean fuel shall not increase compared to exhaust and evaporative emissions from the use of gasoline that complies with Title 13, Division 3, Chapter 5, Article 1, California Code of Regulations.

(2) Use of the new clean fuel in such existing motor vehicles would not result in increased deterioration of the vehicle and would not void the warranties of any such vehicles.

(b) Whenever the state board designates a new clean fuel pursuant to this section, the state board shall also establish by regulation required specifications for the new clean fuel sold commercially in California.

1065.703 Distillate diesel fuel. April 28, 2014. [n/a]
1065.705 Residual fuel. April 28, 2014.
1065.710 Gasoline. February 19, 2015.

1. Subparagraph (a). [No change.]
2. Delete subparagraph (b) and replace with the following:

(b)(1) **Certification Gasoline Fuel Specifications for the 2004 through 2019 Model Years**.

For 2004 through 2019 model engines certifying in accordance with these test procedures, gasoline having the specifications listed below may be used in exhaust and evaporative emission testing as an option to the specifications in §1065.710(c). If a manufacturer elects to utilize this option, both exhaust and evaporative emission testing shall be conducted by the manufacturer with gasoline having the specifications listed below, and the Executive Officer shall conduct exhaust and evaporative emission testing with gasoline having the specifications listed below. For the 2015 through 2019 model years, gasoline having the specifications listed in the following section (b)(2) or gasoline having the specifications in §1065.710(b), may be used in exhaust and evaporative emission testing as an option to the specifications in §1065.710(c) and this section (b)(1). If a manufacturer elects to certify a 2015 through 2019 model year engine using gasoline having the specifications listed in the following section (b)(2) or gasoline having the specifications in §1065.710(b), both exhaust and evaporative emission testing shall be conducted by the manufacturer with gasoline having the specifications listed in the following section (b)(2) or gasoline having the specifications in §1065.710(b), respectively, and the Executive Officer shall conduct exhaust and evaporative emission testing with gasoline having the specifications listed in the following section (b)(2) or gasoline having the specifications in §1065.710(b), respectively.

California Certification Gasoline Specifications for the 2004 through 2019 Model Years		
Fuel Property[a]	**Limit**	**Test Method [b]**
Octane (R+M)/2	91 (min)	D 2699-88, D 2700-88
Sensitivity	7.5 (min)	D 2699-88, D 2700-88
Lead	0-0.01g/gal (max); no lead added	§2253.4(c), title 13 CCR
Distillation Range:		§2263, title 13 CCR[c]
10% point	130-150 °F	
50% point [d]	200-210 °F	
90% point [e]	290-300 °F	
EP, maximum	390 °F	
Residue	2.0 vol. % (max)	

Sulfur	30-40 ppm by wt.	§2263, title 13 CCR
Phosphorous	0.005 g/gal (max)	§2253.4(c), title 13 CCR
RVP	6.7-7.0 psi	§2263, title 13 CCR
Olefins	4.0-6.0 vol. %	§2263, title 13 CCR
Total Aromatic Hydrocarbons	22-25 vol. %	§2263, title 13 CCR
Benzene	0.8-1.0 vol. %[f]	§2263, title 13 CCR
Multi-substituted Alkyl Aromatic Hydrocarbons	12-14 vol. %[g]	
MTBE	10.8-11.2 vol. %	§2263, title 13 CCR
Additives	Sufficient to meet requirements of §2257, title 13 CCR	
Copper Corrosion	No. 1	D 130-88
Gum, washed	3.0 mg/100 mL (max)	D 381-86
Oxidation Stability	1000 minutes (min)	D 525-88
Specific Gravity	Report [h]	
Heat of Combustion	Report [h]	
Carbon	Report wt. % [h]	
Hydrogen	Report wt. % [h]	

[a] The gasoline must be blended from typical refinery feedstocks.

[b] ASTM specification unless otherwise noted. A test method other than that specified may be used following a determination by the Executive Officer that the other method produces results equivalent to the results with the specified method.

[c] Although §2263, title 13, CCR refers to the temperatures of the 50 and 90 percent points, this procedure can be extended to the 10 percent and end point temperatures, and to the determination of the residue content.

[d] The range for interlaboratory testing is 195-215º F.

[e] The range for interlaboratory testing is 285-305º F.

[f] The range for interlaboratory testing is 0.7-1.1 percent by volume.

[g] "Detailed Hydrocarbon Analysis of Petroleum Hydrocarbon Distillates, Reformates, and Gasoline by Single Column High Efficiency (Capillary) Column Gas Chromatography," by Neil Johansen, 1992, Boulder, CO.

[h] The fuel producer should report this fuel property to the fuel purchaser. Any generally accepted test method may be used and shall be identified in the report.

(b)(2) **Certification Gasoline Fuel Specifications for the 2020 and Subsequent Model Years**.

For 2020 and subsequent model engines, gasoline having the specifications listed below may be used in exhaust and evaporative emission testing as an option to the specifications in CFR §1065.710(b). If a manufacturer elects to utilize this option, both exhaust and evaporative emission testing shall be conducted by the manufacturer with gasoline having the specifications listed below, and the Executive Officer shall conduct exhaust and evaporative emission testing with gasoline having the

specifications listed below. If a manufacturer elects to utilize gasoline having the specifications in CFR §1065.710(b), both exhaust and evaporative emission testing shall be conducted by the manufacturer with gasoline having the specifications in CFR §1065.710(b), and the Executive Officer shall conduct exhaust and evaporative emission testing with gasoline having the specifications in CFR §1065.710(b).

California Certification Gasoline Specifications for the 2020 and Subsequent Model Years		
Fuel Property[a]	**Limit**	**Test Method [b]**
Octane (R+M)/2[i]	87-88.4; 91 (min)	D 2699-88, D 2700-88
Sensitivity	7.5 (min)	D 2699-88, D 2700-88
Lead	0-0.01g/gal (max); no lead added	§2253.4(c), title 13 CCR
Distillation Range:		§2263, title 13 CCR[c]
10% point	130-150 °F	
50% point [d]	205-215 °F	
90% point [e]	310-320 °F	
EP, maximum	390 °F	
Residue	2.0 vol. % (max)	
Sulfur	8-11 ppm by wt.	§2263, title 13 CCR
Phosphorous	0.005 g/gal (max)	§2253.4(c), title 13 CCR
RVP	6.9-7.2 psi	§2263, title 13 CCR
Olefins	4.0-6.0 vol. %	§2263, title 13 CCR
Total Aromatic Hydrocarbons	19.5-22.5 vol. %	§2263, title 13 CCR
Benzene	0.6-0.8 vol. %[f]	§2263, title 13 CCR
Multi-substituted Alkyl Aromatic Hydrocarbons	13-15 vol. %[g]	
MTBE	0.05 vol. %	§2263, title 13 CCR
Ethanol	9.2-10.0 vol. %	§2263, title 13 CCR
Total Oxygen	3.3-3.7 wt. %	§2263, title 13 CCR
Additives	Sufficient to meet requirements of §2257, title 13 CCR	
Copper Corrosion	No. 1	D 130-88
Gum, washed	3.0 mg/100 mL (max)	D 381-86
Oxidation Stability	1000 minutes (min)	D 525-88

Specific Gravity	Report [h]	
Heat of Combustion	Report [h]	
Carbon	Report wt. % [h]	
Hydrogen	Report wt. % [h]	

[a] The gasoline must be blended from typical refinery feedstocks.

[b] ASTM specification unless otherwise noted. A test method other than that specified may be used following a determination by the Executive Officer that the other method produces results equivalent to the results with the specified method.

[c] Although §2263, title 13, CCR refers to the temperatures of the 50 and 90 percent points, this procedure can be extended to the 10 percent and end point temperatures, and to the determination of the residue content.

[d] The range for interlaboratory testing is 195-215° F.

[e] The range for interlaboratory testing is 285-305° F.

[f] The range for interlaboratory testing is 0.7-1.1 percent by volume.

[g] "Detailed Hydrocarbon Analysis of Petroleum Hydrocarbon Distillates, Reformates, and Gasoline by Single Column High Efficiency (Capillary) Column Gas Chromatography," by Neil Johansen, 1992, Boulder, CO.

[h] The fuel producer should report this fuel property to the fuel purchaser. Any generally accepted test method may be used and shall be identified in the report.

[i] For vehicles/engines that require the use of premium gasoline as part of their warranty, the Octane ((R+M)/2) shall be a 91 minimum. All other certification gasoline specifications, as shown in this table, must be met. For all other vehicles/engines, the Octane ((R+M)/2) shall be 87-88.4.

1065.715 Natural gas. April 28, 2014.

1. Delete subparagraph (a) and replace with the following:

(a)(1) **Exhaust emission test fuel.** For dedicated, dual-fueled or hybrid electric vehicles which use natural gas, fuel used for exhaust and evaporative emission testing shall meet the specifications listed in section 2292.5, title 13, CCR, (Specifications for Compressed Natural Gas) as modified by the following:

Compressed Natural Gas Certification Test Fuel	
Specification	Limit
Methane	90.0 ± 1.0 mole percent
Ethane	4.0 ± 0.5 mole percent
C_3 and higher hydrocarbon content	2.0 ± 0.3 mole percent
Oxygen	0.5 mole percent maximum
Inert gases (CO_2 + N_2)	3.5 ± 0.5 vol. percent

(a)(2) **Mileage accumulation fuel.** For dedicated, dual-fueled or hybrid electric vehicles which use natural gas, fuel used for service accumulation shall meet the specifications listed in section 2292.5, title 13, CCR (Specifications for Compressed Natural Gas).

2. Subparagraphs (b) through (d). [No change.]

1065.720 Liquefied petroleum gas. April 28, 2014.

1. Delete subparagraph (a) and replace with the following:

(a)(1) **Evaporative and exhaust emission test fuel.** For dedicated, dual-fueled or hybrid electric vehicles which use liquefied petroleum gas, fuel used for exhaust and evaporative emission testing shall meet the specifications listed in title 13, CCR, section 2292.6 (Specifications for Liquefied Petroleum Gas) as modified by the following:

Liquefied Petroleum Gas Certification Test Fuel	
Specification	Limit
Propane	93.5 ± 1.0 volume percent
Propene	3.8 ± 0.5 volume percent
Butane and heavier components	1.9 ± 0.3 volume percent

(a)(2) Mileage accumulation fuel. For dedicated, dual-fueled or hybrid electric vehicles which use liquefied petroleum gas, fuel used for service accumulation shall meet the specifications listed in title 13, CCR, section 2292.6 (Specifications for Liquefied Petroleum Gas).

(a)(3) The specification range of the fuels to be used in this section (a) shall be measured in accordance with ASTM D2163-91 and reported in accordance with §86.094-21.

2. Subparagraphs (b) through (d). [No change.]

1065.725 High-level ethanol-gasoline blends. April 28, 2014.

A. Federal provisions. [No change.]

B. California provisions.

1. California Alcohol Certification Fuel Specifications.

1.1 **Emission test fuel.** For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for exhaust and evaporative emission testing shall meet the specifications set forth in section 2292.1, title 13, CCR, (Specifications for M-100 Fuel Methanol) or section 2292.3 (Specification for E-100 Fuel Ethanol) as modified by the following:

Specification	Limit
M-100 Fuel Methanol	
Methanol	98.0 ± 0.5 vol. percent
Ethanol	1.0 vol. percent max.
Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).	1.0 ± 0.1 vol. percent
E-100 Fuel Ethanol	
Ethanol	98.0 ± 0.5 vol. percent
Methanol	1.0 vol. percent max.
Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).	1.0 ± 0.1 vol. percent

1.2 **Mileage accumulation fuel.** For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for service accumulation shall meet the applicable specifications set forth in section 2292.1, title 13, CCR, (Specifications for M-100 Fuel Methanol) or section 2292.3 (Specification for E-100 Fuel Ethanol).

1.3 Fuel additives and ignition improvers intended for use in alcohol test fuels shall be subject to the approval of the Executive Officer. In order for such approval to be granted, a manufacturer must demonstrate that emissions will not be adversely affected by the use of the fuel additive or ignition improver.

2 **California Certification Fuel Specifications – Mixtures of Petroleum and Alcohol Fuels for Flexible Fuel Vehicles.**

2.1 **Exhaust emission test fuel for emission-data and durability-data vehicles.** For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for exhaust emission testing shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specifications for E-85 Fuel Ethanol) as modified by the following. E-85 that meets the specifications in §1065.725 may be used in exhaust and evaporative emission testing as an option to the E-85 Fuel Ethanol specifications in this subparagraph. If a manufacturer elects to utilize E-85 Fuel Ethanol having the specifications listed below, the Executive Officer shall conduct exhaust emission testing with E-85 Fuel Ethanol having the specifications listed below. If a manufacturer elects to utilize E-85 Fuel Ethanol having the specifications set forth in 40 CFR §1065.725, the Executive Officer shall conduct

exhaust emission testing with E-85 Fuel Ethanol having the specifications set forth in 40 CFR §1065.725.

Specification	Limit
M-85 Fuel Methanol	
Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).	13-16 vol. percent
Reid vapor pressure	8.0-8.5 psi, using common blending components from the gasoline stream.
E-85 Fuel Ethanol	
Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).	15-21 vol. percent
Reid vapor pressure	8.0-8.5 psi, using common blending components from the gasoline stream.

2.2 **Mileage accumulation fuel.** For flexible fuel Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles that use Otto-cycle or diesel alcohol engines, petroleum fuel shall meet the applicable specifications in §1065.710, as modified in §1065.710 subparagraph 2, above, and methanol or ethanol fuel shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specification for E-85 Fuel Ethanol). Mileage accumulation procedures shall be subject to the requirements set forth in 40 CFR §86.004-26 and §86.1831-01(a) and (b) and are subject to the prior approval of the Executive Officer. A manufacturer shall consider expected customer fuel usage as well as emissions deterioration when developing its durability demonstration.

2.3 **Evaporative emission test fuel for emission-data and durability-data vehicles.** For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, a blend of methanol or ethanol fuel used for evaporative emission testing shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specifications for E-85 Fuel Ethanol) and gasoline meeting the specifications of §1065.710, as modified in §1065.710 subparagraph 2, above, such that the final blend is composed of either 35 volume percent methanol (± 1.0 volume percent of total blend) for methanol-fueled vehicles or 10 volume percent ethanol (± 1.0 volume percent of total blend) for ethanol-fueled vehicles. Alternative alcohol-gasoline blends may be used in place of M35 or E10 if demonstrated to result in equivalent or higher evaporative emissions, subject to prior approval of the Executive Officer.

2.4 **Additive requirements.** Fuel additives and ignition improvers intended for use in alcohol test fuels shall be subject to the approval of the Executive Officer. In order for such approval to be granted, a manufacturer must demonstrate that emissions will not be adversely affected by the use of the fuel additive or ignition improver.

1065.735 Diesel exhaust fluid. [n/a]
1065.740 Lubricants. July 13, 2005.
1065.745 Coolants. July 13, 2005.
1065.750 Analytical gases. October 25, 2016.
1065.790 Mass standards. September 15, 2011.

Subpart I –Testing with Oxygenated Fuels.

1065.801 Applicability. July 13, 2005.
1065.805 Sampling system. April 28, 2014.
1065.845 Response factor determination. October 25, 2016.
1065.850 Calculations. April 28, 2014.

Subpart K – Definitions and Other Reference Information.

1065.1001 Definitions. October 25, 2016.

1. Amend the definition of "Designated Compliance Officer" as follows: *Designated Compliance Officer* means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.
2. Amend the definition of "Hydrocarbon" as follows: *Hydrocarbon (HC)* means THC, THCE, NMHC, NMOG, or NMHCE, as applicable. Hydrocarbon generally means the hydrocarbon group on which the emission standards are based for each type of fuel and engine.
3. Delete the definition of "Nonmethane nonethane hydrocarbon (NMNEHC)."

1065.1005 Symbols, abbreviations, acronyms, and units of measure. October 25, 2016.

A. Federal Provisions. [No change.]
B. California Provisions.
ARB means Air Resources Board.

1065.1010 Reference materials. October 25, 2016.

Subpart L – Methods for Unregulated and Special Pollutants

1065.1101 Applicability. April 28, 2014.

Semi-Volatile Organic Compounds

1065.1103 General provisions for SVOC measurement. April 28, 2014.
1065.1105 Sampling system design. October 25, 2016.
1065.1107 Sample media and sample system preparation; sample system assembly. October 25, 2016.
1065.1109 Post-test sampler disassembly and sample extraction. October 25, 2016.
1065.1111 Sample analysis. April 28, 2014.

PART 1068 – GENERAL COMPLIANCE PROVISIONS FOR HIGHWAY, STATIONARY, AND NONROAD PROGRAMS

Subpart A – Applicability and Miscellaneous Provisions

1068.1 Does this part apply to me? October 25, 2016.

1. Subparagraph (a) to (a)(1). [No change.]
2. Amend (a)(2) as follows: This part 1068 applies to heavy-duty motor vehicles and motor vehicle engines used in such vehicles, that are subject to the emission standards in title 13, CCR, section 1956.8.
3. Delete subparagraphs (a)(3) through (d).

1068.20 May ARB enter my facilities for inspections? October 25, 2016.

1. Delete subparagraph (a) and replace with: We may inspect your testing, manufacturing processes, storage facilities (including port facilities for imported engines and equipment or other relevant facilities), or records, as authorized by the California Health and Safety Code (Division 25.5 and Part 5, Division 26), to enforce the provisions of this chapter. Inspectors will have authorizing credentials and will usually limit inspections to normal operating hours.
2. Subparagraph (b). [No change.]
3. Delete subparagraph (c) and replace with: Any ARB Enforcement Officer must be furnished by those in charge of a facility being inspected with such reasonable assistance as may be necessary to discharge any function listed in this paragraph. Each applicant for or recipient of certification is required to cause those in charge of a facility operated for its benefit to furnish such reasonable assistance without charge to the ARB irrespective of whether or not the applicant controls the facility.
4. Delete subparagraph (d) and replace with: The duty to admit or cause to be admitted any ARB Enforcement Officer applies whether or not the applicant owns or controls the facility in question and applies both to domestic and foreign engine and vehicle manufacturers and facilities. The ARB will not attempt to make any inspections that it has been informed that local law forbids. However, if local law makes it impossible to insure the accuracy of data generated at a facility, no informed judgment that an engine or vehicle is certifiable or is covered by an Executive Order can properly be based on the data. It is the responsibility of the engine manufacturer or vehicle manufacturer to locate its testing and manufacturing facilities in jurisdictions where this situation will not arise.

1068.30 Definitions. October 25, 2016.

A. Federal Provisions. [All federal definitions apply, except as otherwise noted below.]

Date of manufacture: Delete and replace with:

Date of manufacture means one of the following:

(1) For engines, the date on which the crankshaft is installed in an engine block, with the following exception:

(i) Manufacturers may assign a date of manufacture at a point in the assembly process later than the date otherwise specified under this definition. For example, a manufacturer may use the build date printed on the label or stamped on the engine as the date of manufacture.

Engine: Delete

B. California Provisions.

"Administrator" means the Executive Officer of the Air Resources Board, or a designee of the Executive Officer.

"Certificate of Conformity" means an Executive Order certifying engines for sale in California.

"Certification" means relating to the process of obtaining an Executive Order for an engine family that complies with the emission standards and requirements in this part.

"Designated Compliance Officer" means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

"EPA" shall also mean Air Resources Board or Executive Officer of the Air Resources Board.

"Standard-setting part" means the articles of the California Code of Regulations that define emission standards for a particular engine.

"United States" in reference to vehicle or engine sales or vehicle or engine introduced into commerce means the vehicle or engine sales or vehicle or engine introduced into commerce in California.

"We (us, our)" means the Executive Officer and any authorized representatives.

1068.35 Symbols, acronyms, and abbreviations. October 8, 2008.

A. Federal Provisions. [No change.]

B. California Provisions.

ARB means Air Resources Board.

1068.45 General labeling provisions. October 25, 2016.

Subpart E – Selective Enforcement Auditing

1068.401 What is a selective enforcement audit? October 25, 2016.
1068.405 What is in a test order? October 25, 2016.
1068.410 How must I select and prepare my engines/equipment? April 30, 2010.
1068.415 How do I test my engines/equipment? October 25, 2016.