

APPENDIX B

PROPOSED AMENDMENTS TO THE TEST PROCEDURES

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APPENDIX B

State of California
AIR RESOURCES BOARD

PROPOSED

**On-Road Heavy-Duty Warranty and Maintenance Amendments to
CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES
FOR 2004 AND SUBSEQUENT MODEL
HEAVY-DUTY DIESEL ENGINES AND VEHICLES**

Adopted: December 12, 2002
Amended: July 24, 2003
Amended: September 1, 2006
Amended: July 26, 2007
Amended: October 17, 2007
Amended: October 14, 2008
Amended: September 27, 2010
Amended: October 12, 2011
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: [Insert Date of GHG PH2 Amendment]
Amended: [Insert Date of this Warranty Amendment]

Note: The existing language, as last amended September 1, 2017, is shown in plain text. The proposed amendments to this document are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions. Amendments to these regulations that were approved by the Board on [Insert Date of GHG PH2 Adoption], as part of the “Proposed California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles (Phase 2) and Proposed Amendments to the Tractor-Trailer GHG Regulation,” but which have not yet been approved by the Office of Administrative Law are indicated in dotted underline to indicate additions and ~~italics double strikeout~~ to

indicate deletions. The dotted underline and ~~italics double-strikeout~~ text is presented for context and completeness only and is not subject to comment in this proposal. Subsections for which no changes are proposed in this rulemaking are indicated with [No change] or “* * * *”.

NOTE: This document is incorporated by reference in section 1956.8(b), 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 diesel engines for sale in California, in addition to containing the exhaust emissions standards and test procedures for these diesel engines.¹ The section numbering conventions for this document are set forth in subparagraph 4 on page 6. 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. Warranty requirements (sections 2036, et seq., title 13, CCR);
- ~~3~~4. OBD II (sections 1968, et seq., title 13, CCR, as applicable);
5. HD OBD (sections 1971, et seq., title 13, CCR, as applicable);
- ~~4~~6. “California Test Procedures for Evaluating Substitute Fuels and New Clean Fuels through 2014,” (incorporated by reference in section 2317, title 13, CCR); and
- ~~5~~7. “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 diesel 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).

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

The following provisions of Subparts A, I, N, S, and T, Part 86, of Subparts A through I, Part 1036, ~~and of Subparts A through K, Part 1065, and of Subparts A and E, Part 1068, Title 40, Code of Federal Regulations, as adopted or amended by the U.S. Environmental Protection Agency on the date set forth next to the applicable section listed below, and only to the extent they pertain to the testing and compliance of exhaust emissions from heavy-duty diesel engines and vehicles, are adopted and incorporated herein by this reference as the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," except as altered or replaced by the provisions set forth below.~~

PART 86 – CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

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

§86.1 Incorporation by reference. ~~February 19, 2015~~ October 25, 2016.

~~Subpart A - General Provisions for **Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks, and Heavy-Duty Engines, and for 1985 and Later Model Year New Gasoline-Fueled, Natural Gas-Fueled, Liquefied Petroleum Gas-Fueled and Methanol-Fueled Heavy-Duty Vehicles** Heavy-Duty Engines and Heavy-Duty Vehicles.~~

1. General Applicability. [§86.xxx-1]

A. Federal Provisions.

* * * *

3. **§86.016-1** ~~April 28, 2014~~ October 25, 2016.

* * * *

B. California provisions.

1. These regulations shall be applicable to all heavy-duty diesel methanol-fueled, ethanol-fueled, natural-gas-fueled and liquefied-petroleum gas-fueled dedicated, dual-fuel and multi-fuel engines (and vehicles) including those engines derived from existing diesel engines. For any engine that is not a distinctly diesel 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 Otto-cycle engine regulations, in consideration of the relative similarity of the engine's torque-speed characteristics and vehicle applications with those of diesel and Otto-cycle engines. Reference to dual fuel vehicles or engines shall also mean bi-fuel vehicles or engines. References to methanol shall also mean ethanol. 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. References to heavy-duty Otto-cycle engines or vehicles do not apply.

3. Any reference to vehicle or engine sales or vehicle or engine production volume throughout the United States shall mean vehicle or engine sales or vehicle or engine volume in California. References to small volume manufacturers shall mean 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, non-conformance penalties, ~~selective enforcement audit~~, evaporative emission, high-altitude vehicles and testing, alternative useful life, 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 title 13, CCR §1976. All heavy-duty methanol- and gaseous-fueled vehicles shall comply with the evaporative requirements in title 13, CCR, §1976.

2. Definitions. [§86.xxx-2]

A. Federal Provisions.

1. **§86.004-2** ~~January 18, 2004~~ October 25, 2016. [All federal definitions apply, except as otherwise noted below. Definitions specific to other requirements are contained in separate documents.]

2. **§86.010-2** April 30, 2010. [All federal definitions apply, except as otherwise noted below. Definitions specific to other requirements are contained in separate documents.]

3. **§86.012-2** September 15, 2011. [All federal definitions apply, except as otherwise noted below. Definitions specific to other requirements are contained in separate documents.]

3.1 Amend paragraph as follows: The definitions of §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.

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- 3. Section numbering; construction. [§86.084-4]. ~~September 21, 1994~~October 25, 2016. [No change.]

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- 6. Hearings on certification. [§86.078-6] ~~December 12, 1984~~October 25, 2016. ~~[No change.]~~

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] April 28, 2014. [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] [n/a]

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

A. Federal provisions.

* * * *

- 2. **§86.007-11 Emission standards and supplemental requirements for 2007 and later model year diesel heavy-duty engines and vehicles.** ~~July 13, 2005~~October 25, 2016.

2.1 Add the following sentence to the introductory paragraph: Except as otherwise noted, references in this subsection to heavy-duty engines or HDEs shall include medium-duty engines as defined in Section I.2.B of these test procedures.

2.2 Subparagraphs (a) ~~and~~ through (a)(1)(ii)(A). [No change.]

2.2.1 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).

2.2.2 Subparagraph (a)(1)(ii)(C) through (a)(iv). [No change.]

2.2.3 Amend subparagraph (a)(2) as follows: The standards set forth in paragraph (a)(1) of this section refer to the exhaust emitted over the operating schedule set forth in paragraph (f)(2) of appendix I to this part, and measured and calculated in accordance with the procedures set forth in subpart N of this part as amended in part II of these test procedures, except as noted in §86.007-23(c)(2) or superseding sections.

2.2.4 Delete subparagraph (a)(3). [For guidance see Subpart N, §86.1360-2007 of these test procedures].

2.2.5 Delete subparagraph (a)(4)(i) through (a)(4)(vi). [For guidance see Subpart N, §86.1370-2007 of these test procedures]

2.3 Subparagraphs (b)(1)(i) through (b)(1)(iii). [No change.]

2.3.1 Delete subparagraph (b)(1)(iv). [For guidance see Subpart N, §86.1370-2007 of these test procedures]

2.3.2 Subparagraphs (b)(2)(i). [No change.]

2.3.3 Delete subparagraph (b)(2)(ii). [For guidance see Subpart N, §86.1370-2007 of these test procedures]

2.3.4 Subparagraph (b)(3) and (b)(4). [No change.]

2.4 Subparagraph (c). [No change.]

2.5 Amend subparagraph (d) as follows: Every manufacturer of new motor vehicle engines subject to the standards prescribed in title 13, CCR, §1956.8 (a), §1956.8 (h), and this section shall, prior to taking any of the actions prohibited by California Health & Safety Code section 43211 or as specified in section 203(a)(1) of the Act, test or cause to be tested motor vehicle engines in accordance with applicable procedures in subpart I or N as amended in part II of these test procedures to ascertain that such test engines meet the requirements of paragraphs (a), (b), (c), and (d) of this section.

2.6 Subparagraphs (e) through (h). [No change.]

* * * *

14. Small-volume manufacturers certification procedures. [§86.xxx-14] April 6, 1994.

A. Federal provisions. [A small volume manufacturer shall mean a California small volume manufacturer as defined in §86.001-1 (e), as modified above. Any reference to 10,000 units shall mean 4,500 units in California based on the average number of units sold for the three previous consecutive model years defined in §86.001-1 (e), as modified in Section I.1.A, above.]

1. ~~§86.094-14 April 28, 2014~~ October 25, 2016. Amend as follows:

1.1 Subparagraphs (a) through (c)(~~3~~) [No change.]

1.2 Amend subparagraph (c)(~~4~~) as follows: Delete the last sentence, "However, the manufacturer is not required to submit the information to the Administrator unless the Administrator requests it."

1.3 Subparagraphs (c)(~~5~~) through ~~(c)(7)(i)(B)~~(c)(3)(ii) [No change.]

1.4 Amend subparagraph ~~(c)(7)(i)(C)(1)~~(c)(3)(ii)(A) as follows: Manufacturers with aggregated sales of less than 301 motor vehicles and motor vehicles engines per year may use assigned deterioration factors that the Executive Officer 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 Subparagraphs ~~(c)(7)(i)(C)(2)~~(c)(3)(ii)(B) through ~~(c)(13)(i)(c)(7)(i)~~ [No change.]

1.6 Add the following sentence to subparagraph ~~(c)(13)(ii)(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. **§86.096-14** March 24, 1993. [No change; pertains to evaporative requirements.]

3. **§86.098-14** April 6, 1994. [No change; pertains to evaporative requirements.]

* * * *

25. Maintenance. [§86.xxx-25]

A. Federal provisions.

1. ~~§86.004-25 August 8, 2014~~ October 25, 2016.

1.1 SubParagraphs (a) through subparagraph (b)(6)(ii)(3)(v)(H). [No change.]

1.2 Add the following title (plus spacing) to the beginning of subparagraph (b)(4):

(4) Minimum Maintenance Intervals for Diesel-Cycle Heavy-Duty Engines:

1.3 Delete and replace subparagraph (b)(4)(i) as follows:

(i) For 2021 and earlier model-year diesel-cycle heavy-duty engines, and for 2022 and subsequent model-year diesel-cycle heavy-duty engines that are certified for use in vehicles with a GVWR less than or equal to 14,000 pounds, the adjustment, cleaning, repair, or replacement of the items listed in paragraphs (b)(4)(i) (A)-(D) of this section shall initially not occur before 50,000 miles (or 1,500 hours) of use and thereafter not more frequently than at intervals of 50,000-miles (or 1,500-hours).

For 2022 and subsequent model-year diesel-cycle heavy-duty engines that are certified for use in vehicles with a GVWR greater than 14,000 pounds:

- *Adjustment or cleaning frequency.* The frequency of manufacturer scheduled adjustment or cleaning for the items listed in paragraphs (b)(4)(i) (A)-(D) shall be limited by the same minimum maintenance intervals as for 2021 or earlier model-year diesel-cycle heavy-duty engines as stated in this paragraph (b)(4)(i).
- *Repair or replacement frequency.* The frequency of manufacturer scheduled repair or replacement for the emission-related components and systems listed in paragraph (b)(4)(vi) shall be limited by the minimum maintenance intervals stated therein.

(A) Exhaust gas recirculation system related filters and coolers.

(B) Crankcase ventilation valves and filters.

(C) Fuel injector tips (cleaning only).

(D) DEF filters.

1.4 Subparagraph (b)(4)(ii). [No change.]

1.5 Delete and replace subparagraph (b)(4)(iii) as follows:

(iii) For 2021 and earlier model-year diesel-cycle heavy-duty engines, and for 2022 and subsequent model-year diesel-cycle heavy-duty engines that are certified for use in vehicles with a GVWR less than or equal to 14,000 pounds, the

adjustment, cleaning, repair, or replacement of the items listed in paragraphs (b)(4)(iii) (A)-(G) of this section shall initially not occur before 100,000 miles (or 3,000 hours) of use and thereafter not more frequently than at intervals of at least 100,000-miles (or 3,000-hours) for light heavy-duty diesel engines, or, thereafter at intervals of at least 150,000 miles (or 4,500 hours) for medium and heavy heavy-duty diesel engines.

For 2022 and subsequent model-year diesel-cycle heavy-duty engines that are certified for use in vehicles with a GVWR greater than 14,000 pounds:

- *Adjustment or cleaning frequency.* The frequency of manufacturer scheduled adjustment or cleaning for the items listed in paragraphs (b)(4)(iii) (A)-(G) shall be limited by the same minimum maintenance intervals as for 2021 or earlier model-year diesel-cycle heavy-duty engines as stated in this paragraph (b)(4)(iii).
- *Repair or replacement frequency.* The frequency of manufacturer scheduled repair or replacement for the emission-related components and systems listed in paragraph (b)(4)(vi) shall be limited by the minimum maintenance intervals stated therein.

(A) Fuel injectors.

(B) Turbocharger.

(C) Electronic engine control unit and its associated sensors and actuators.

(D) Particulate trap or trap oxidizer systems including related components (adjustment and cleaning only for filter element, scheduled replacement of the filter element is not allowed during the useful life).

(E) Exhaust gas recirculation system (including all related control valves, and tubing) except as otherwise provided in paragraph (b)(4)(i)(A) of this section.

(F) Catalytic converter (adjustment and cleaning only for catalyst beds, scheduled replacement of the bed is not allowed during the useful life).

(G) Any other add-on emissions-related component (i.e., a component whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emissions control and whose function is not integral to the design and performance of the engine.)

1.6 Subparagraphs (b)(4)(iv) through (b)(4)(v). [No change.]

1.7 Add new subparagraph (b)(4)(vi) as follows:

(vi) For 2022 and subsequent model-year diesel-cycle heavy-duty engines certified for use in vehicles with a GVWR greater than 14,000 pounds, repair and replacement for the emission-related components and systems listed below shall not occur before the mileage intervals specified in the following table, and thereafter not more frequently than at least those same intervals. Manufacturers may not schedule maintenance based on any other metric (e.g., hours of operation, calendar years, months, etc.) except as specifically provided in the table below:

<u>Component or System</u>	<u>Minimum Repair / Replacement Interval</u>		
	<u>Light Heavy-Duty Diesel Engine</u> <small>14,000 lbs. < GVWR ≤ 19,500 lbs.</small>	<u>Medium Heavy-Duty Diesel Engine</u> <small>19,500 lbs. < GVWR ≤ 33,000 lbs.</small>	<u>Heavy Heavy-Duty Diesel Engine</u> <small>GVWR > 33,000 lbs.</small>
<u>Exhaust Gas Recirculation (EGR) System (valves & cooler - not including hoses)</u>	Not Replaceable ¹	Not Replaceable ¹	Not Replaceable ¹
<u>Exhaust Gas Recirculation (EGR) System (other than valves & cooler)</u>	110,000 miles, or 3 years	185,000 miles	435,000 miles
<u>Crankcase Ventilation System</u>	50,000 miles	60,000 miles, or 2,000 hours, or 1 year	60,000 miles, or 2,000 hours, or 1 year
<u>Diesel Exhaust Fluid (DEF) Filter</u>	110,000 miles, or 2 years	125,000 miles, or 3,000 hours, or 10 years	125,000 miles, or 3,000 hours
<u>Fuel Injectors</u>	110,000 miles	185,000 miles	435,000 miles
<u>Turbochargers</u>	Not Replaceable ¹	Not Replaceable ¹	Not Replaceable ¹
<u>Electronic Control Unit, Sensors, and Actuators</u>	100,000 miles, or 3,000 hours	150,000 miles, or 4,500 hours	150,000 miles, or 4,500 hours, or 5 years
<u>Diesel Particulate Filter System (element only)</u>	Not Replaceable ¹	Not Replaceable ¹	Not Replaceable ¹
<u>Diesel Particulate Filter System (other than element)</u>	110,000 miles	185,000 miles, or 3 years	435,000 miles, or 3 years
<u>Catalytic Converter (bed only)</u>	Not Replaceable ¹	Not Replaceable ¹	Not Replaceable ¹
<u>Catalytic Converter (other than catalyst bed)</u>	110,000 miles	185,000 miles	435,000 miles
<u>Any other add-on or new technology emission-related component or system whose primary purpose is to reduce emissions or whose failure will significantly degrade emissions control</u>	110,000 miles, or 3,300 hours ²	185,000 miles, or 5,550 hours ²	435,000 miles, or 13,050 hours ²

1. For components or systems designated in the table as "Not Replaceable," manufacturers shall not schedule any repair / replacement maintenance intervals throughout the applicable useful life of the heavy-duty diesel engine, defined in § 86.004-2 of the California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, last amended [date of amendment], except as noted in (b)(7)(i) of this section.
2. Manufacturers may request more frequent repair / replacement maintenance intervals for add-on or new technology emission-related components provided that the manufacturer demonstrates to the Executive Officer's satisfaction that such intervals are technologically necessary and appropriate.

1.8 Subparagraphs (b)(5) through (b)(6)(ii)(F). [No change.]

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

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

4.41.11 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, §60055.140, et seq., with respect to such issue.

4.51.12 SubParagraphs (c) through (h). [No change.]

1.13 Delete and replace paragraph (i) as follows:

(i) Notwithstanding the provisions of paragraphs (b)(4) and (6) of this section, manufacturers may schedule replacement or repair of particulate trap elements (or trap oxidizer elements), catalytic converter beds (including NO_x adsorber, diesel oxidation catalyst, and selective catalyst reduction beds), turbochargers, and exhaust gas recirculation systems provided that the manufacturer demonstrates to the Executive Officer's satisfaction that the repair or replacement will be performed according to the schedule and the manufacturer pays for the repair or replacement.

~~2. §86.007-25. January 18, 2001. [No change except that the amendments indicated for §86.004-25 above still apply.]~~

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] January 18, 2001.

A. Federal provisions.

1. ~~§86.004-28. April 28, 2014~~.....October 25, 2016. Amend as follows:

* * * *

30. Certification. [§86.xxx-30]

A. Federal provisions

* * * *

2. ~~§86.007-30. April 28, 2014~~.....October 25, 2016. Amend as follows:

* * * *

35. Labeling. [§86.xxx-35].

A. Federal Provisions.

1. ~~§86.001-35~~.....~~§86.095-35. April 6, 1994~~.....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:

1.3.1 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 diesel engines." It may also state that the engine conforms to any applicable federal or Canadian emission standards for new heavy-duty diesel engines.

1.3.2 For 2004 through 2006 model year heavy heavy-duty diesel-fueled, dual-fuel, and bi-fuel engines to be used in urban buses that are certified to the optional reduced emission standards and are sold to any transit agency exempted under paragraphs (c)(8) and (d)(7), title 13, CCR, §1956.2 from the requirements of paragraphs (c)(5) and (d)(4), title 13, CCR §1956.2.

"This engine conforms to California regulations applicable to XXXX model year new urban bus or heavy-duty diesel engines and is certified to a NOx plus NMHC optional reduced-emission standards of XXX g/bhp-hr (for optional reduced-emission standards specify between 0.3 and 1.8, inclusive, at 0.3 b/bhp-hr increments, and a particulate matter standards of 0.01 g/bhp-hr)."

1.3.3 For all other 2004 through 2006 model year heavy-duty diesel cycle engines, including those used in urban buses, that are certified to the optional reduced-emission standards, the label shall contain the following statement:

"This engine conforms to California regulations applicable to XXXX model year new (specify urban bus or heavy-duty diesel) engines and is certified to a NOx plus NMHC optional reduced-emission standards of XXX g/bhp-hr (for optional reduced-emission standards specify between 0.3 and 1.8, inclusive, at 0.3 b/bhp-hr increments, and a particulate matter standard of 0.03 g/bhp-hr, 0.02 g/bhp-hr, or 0.01 g/bhp-hr)."

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

~~2. §86.007-35. February 19, 2015.~~

~~2.1 Subparagraphs (a) through (i). [No change except that the amendments set forth in §86.001-35 apply.]~~

B. California provisions.

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37. Production vehicles and engines. [§86.085-37] ~~April 28, 2014~~ October 25, 2016. [No change.]

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Subpart N - Exhaust Test Procedures for Heavy-duty Engines

86.1301 Scope; applicability. ~~July 13, 2005~~October 25, 2016.

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86.1362 Steady-state testing with a ramped-modal cycle. ~~April 28, 2014~~
October 25, 2016.

86.1363-2007 Steady-state testing with a discrete-mode cycle. June 30, 2008.
(Deleted on April 28, 2014, by U.S. EPA, but this section remains unchanged in these test procedure since they were applicable to 2004 through 2009 model year heavy-duty engines.)

86.1370 Not-To-Exceed test procedures. ~~April 28, 2014~~October 25, 2016.

A. Federal provisions.

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7. Subparagraph (g) through (j) ~~NOx and NMHC aftertreatment warm-up~~.
[No change.]

~~8. Subparagraph (h) Emergency vehicle AECs. [No change.]~~

B. California provisions.

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Subpart T - Manufacturer-Run In-Use Testing Program for Heavy-Duty Diesel Engines.

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86.1910 How must I prepare and test my in-use engines? ~~November 8, 2010~~
October 25, 2016.

86.1912 How do I determine whether an engine meets the vehicle-pass criteria?
~~November 8, 2010~~October 25, 2016.

* * * *

86.1920 What in-use testing information must I report to ~~EPA/ARB?~~ ~~November 8,~~
~~2010~~ October 25, 2016.

* * * *

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? ~~September 15, 2011~~ October 25, 2016.
1. Amend subparagraph (a) as follows: Except as specified in § 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? ~~September 15, 2011~~ October 25, 2016.
- 1036.5 Which engines are excluded from this part's requirements? ~~June 17, 2013~~ October 25, 2016.
- 1036.10 How is this part organized? ~~September 15, 2011~~ October 25, 2016.
- 1036.15 Do any other regulation parts apply to me? ~~September 15, 2011~~ October 25, 2016.
- 1036.30 Submission of information. ~~September 15, 2011~~ 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. ~~September 15, 2011~~ October 25, 2016.
- 1036.108 Greenhouse gas emission standards. ~~September 15, 2011~~ 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 ~~2022~~2020 model years, a manufacturer may elect to demonstrate compliance with this 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 §1036.730.

2. Subparagraphs (a) through ~~(f)~~, (a)(1)(i). [No change.]

3. Add the following language to subparagraph (a)(1)(ii): As an option, 2017 through 2027 model year heavy-duty diesel engines, except in all cases engines used in medium-duty vehicles, may be certified to the Optional Low-CO₂ Emission Standards. The CO₂ emissions from engines certified to the Optional Low-CO₂ Emission Standards may not exceed the following standards:

Optional Low-CO₂ Emission Standards for 2017 through 2027 Model Year Heavy-Duty Diesel Engines (grams per horsepower-hour or g/hp-hr)				
<i>Light heavy-duty – vocational</i>	<i>Medium heavy-duty – vocational</i>	<i>Heavy heavy-duty – vocational</i>	<i>Medium heavy-duty – tractor</i>	<i>Heavy heavy-duty – tractor</i>
490	474	446	409	387

Engines certified to the Optional Low-CO₂ Emission Standards must also comply with the applicable CH₄ and N₂O emission standards set forth in subparagraphs (a)(2) and (a)(3), respectively. In addition, engines certified to these Optional Low-CO₂ Emission Standards 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)(2) through (f). [No change.]

1036.115 Other requirements. ~~April 28, 2014~~ October 25, 2016.

1036.130 Installation instructions for vehicle manufacturers. ~~September 15, 2014~~ 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. ~~September 15, 2014~~ 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. ~~September 15, 2014~~ October 25, 2016.

1036.150 Interim provisions. ~~June 17, 2013~~ October 25, 2016.

1. Amend subparagraph (a) as follows: *Credit provisions for 2013 model year compliance.* The provisions of this paragraph (a) apply to 2013 model year heavy-duty diesel engines that have generated early credits with U.S. Environmental Protection Agency. For each 2013 model year heavy-duty diesel engine that is certified to the greenhouse gas standards of 40 CFR Part 1036, an equal amount of credit as given by the U.S. Environmental Protection Agency will be granted in the California ABT Program. The manufacturer must notify ARB of its intent to use this provision before submitting its application and must submit to ARB all data that the manufacturer 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.

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

Subpart C – Certifying Engine Families

1036.205 What must I include in my application? ~~June 17, 2013~~ 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 §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. ~~September 15, 2011~~ October 25, 2016.
- 1036.225 Amending my application for certification. ~~June 17, 2013~~ October 25, 2016.
- 1036.230 Selecting engine families. ~~September 15, 2011~~ October 25, 2016.
- 1036.235 Testing requirements for certification. ~~September 15, 2011~~ October 25, 2016.
- 1036.241 Demonstrating compliance with greenhouse gas ~~pollutant~~ emission standards. ~~September 15, 2011~~ October 25, 2016.
- 1036.250 Reporting and recordkeeping for certification. ~~September 15, 2011~~ October 25, 2016.
- 1036.255 What decisions may ~~EPA/ARB~~ make regarding my certificate of conformity? ~~September 15, 2011~~ October 25, 2016.

Subpart D – ~~[Reserved]~~ 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. ~~September 15, 2011~~ October 25, 2016.

Subpart F – Test Procedures

- 1036.501 How do I run a valid emission test? ~~September 15, 2011~~ 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. ~~June 17, 2013~~ October 25, 2016.
- 1036.530 Calculating greenhouse gas emission rates. ~~September 15, 2011~~ 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 ~~to these engines?~~ ~~September 15, 2011~~ 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 ~~Innovative~~ Off-cycle technology credits and adjustments for reducing greenhouse gas emissions. ~~September 15, 2011~~ 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. ~~June 17, 2013~~ October 25, 2016.
- 1036.620 Alternate CO₂ standards based on model year 2011 compression-ignition engines. ~~September 15, 2011~~ October 25, 2016.
- 1036.625 In-use compliance with family emission limits (FELs). ~~September 15, 2011~~ 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. ~~September 15, 2011~~ October 25, 2016.
1. Add the following language to subparagraph (a): Engines certified to the Optional Low-CO₂ 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. ~~September 15, 2011~~ October 25, 2016.
- 1036.710 Averaging. ~~September 15, 2011~~ October 25, 2016.
- 1036.715 Banking. ~~September 15, 2011~~ October 25, 2016.
- 1036.720 Trading. ~~September 15, 2011~~ October 25, 2016.
- 1036.725 What must I include in my application for certification? ~~September 15, 2011~~ October 25, 2016.
- 1036.730 ABT reports. ~~September 15, 2011~~ October 25, 2016.
- 1036.735 Recordkeeping. ~~September 15, 2011~~ October 25, 2016.
- 1036.740 Restrictions for using emission credits. ~~September 15, 2011~~ October 25, 2016.
- 1036.745 End-of-year CO₂ credit deficits. ~~September 15, 2011~~ October 25, 2016.
- 1036.750 What can happen if I do not comply with the provisions of this subpart? ~~September 15, 2011~~ October 25, 2016.
- 1036.755 Information provided to the Department of Transportation. [n/a]

Subpart I – Definitions and Other Reference Information

1036.801 Definitions. ~~June 17, 2013~~ 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 ~~and subsequent 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 ~~vehicles~~ 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. ~~September 15, 2011~~ June 30, 2017.

A. Federal Provisions. [No change.]

B. California Provisions.

ARB means Air Resources Board.

1036.810 Incorporation by reference. ~~September 15, 2011~~ October 25, 2016.

1036.815 Confidential information. ~~September 15, 2011~~ 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. ~~September 15, 2011~~ 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. ~~September 15, 2011~~ October 25, 2016.

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

2. Delete subparagraph (e).

Appendix I to Part 1036 – Default Engine Fuel Maps for § 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 ~~EPA~~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. ~~February 19, 2015~~October 25, 2016.
- 1065.12 Approval of alternate procedures. April 28, 2014.
- 1065.15 Overview of procedures for laboratory and field testing. ~~April 28, 2014~~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. ~~April 28, 2014~~ 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. ~~April 28, 2014~~ 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. ~~April 28, 2014~~ 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. ~~September 15, 2011~~ October 25, 2016.
- 1065.225 Intake-air flow meter. ~~April 28, 2014~~ 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. October 25, 2016.~~
- 1065.248 Gas divider. July 13, 2005.

CO and CO₂ Measurements

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

Hydrocarbon Measurements

- 1065.260 Flame ionization detector. ~~April 28, 2014~~ 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 CH₄, 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 §1065.660(b)(4).
 4. Amend subparagraph (d) as follows: NMHC CH₄ determination from subtraction of CH₄ from THC. Determine CH₄ as described in §1065.660(d)(2). Determine NMHC from subtraction of CH₄ from THC as described in §1065.660(b)(3). Determine CH₄ as described in §1065.660(d)(2).
 5. Subparagraph (e). [No change.]

1065.267 Gas chromatograph with a flame ionization detector. ~~April 28, 2014~~
October 25, 2016.

1065.269 Photoacoustic analyzer for ethanol and methanol. April 28, 2014.

NO_x Measurements

- 1065.270 Chemiluminescent detector. April 28, 2014.
- 1065.272 Nondispersive ultraviolet analyzer. April 28, 2014.
- 1065.275 N₂O measurement devices. ~~April 28, 2014~~ October 25, 2016.

O₂ Measurements

1065.280 Paramagnetic and magnetopneumatic O₂ detection analyzers. April 28, 2014.

Air-to Fuel Ratio Measurements

1065.284 Zirconia (ZrO₂) 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. ~~April 28, 2014~~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. ~~September 15, 2011~~October 25, 2016.
- 1065.341 CVS, PFD, and batch sampler verification (propane check). ~~April 28, 2014~~October 25, 2016.
- 1065.342 Sample dryer verification. April 30, 2010.
- 1065.345 Vacuum-side leak verification. ~~April 30, 2010~~October 25, 2016.

CO and CO₂ Measurements

- 1065.350 H₂O interference verification for CO₂ NDIR analyzers. April 28, 2014.
- 1065.355 H₂O and CO₂ interference verification for CO NDIR analyzers. April 28, 2014.

Hydrocarbon Measurements

- 1065.360 FID optimization and verification. ~~April 28, 2014~~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 O₂ interference verification. April 28, 2014.
- 1065.365 Nonmethane cutter penetration fractions. ~~April 28, 2014~~ 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 CH₄ 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 $\pm 2\%$ of the flow-weighted mean concentration of CH₄ or NMHC expected at the standard, though we strongly recommend a lower interference that is within $\pm 1\%$.
 4. Subparagraph (d). [No change.]
- 1065.369 H₂O, CO, and CO₂ interference verification for photoacoustic alcohol analyzers. April 28, 2014.

NO_x Measurements

- 1065.370 CLD CO₂ and H₂O quench verification. ~~April 28, 2014~~ October 25, 2016.
- 1065.372 NDUV analyzer HC and H₂O interference verification. September 15, 2011.
- 1065.375 Interference verification for N₂O analyzers. ~~April 28, 2014~~ October 25, 2016.
- 1065.376 Chiller NO₂ penetration. April 28, 2014.
- 1065.378 NO₂-to-NO converter conversion verification. September 15, 2011.

PM Measurements

- 1065.390 PM balance verifications and weighing process verification. ~~November 8, 2010~~ 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. ~~April 28, 2014~~ 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 data 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. ~~April 28, 2014~~ 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. ~~June 30, 2008~~ 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. ~~April 28, 2014~~ October 25, 2016.
- 1065.610 Duty cycle generation. ~~February 19, 2015~~ October 25, 2016.
- 1065.630 Local acceleration of gravity. April 28, 2014.
- 1065.640 Flow meter calibration calculations. ~~April 28, 2014~~ October 25, 2016.
- 1065.642 SSV, CFV, and PDP molar flow rate calculations. ~~April 28, 2014~~ October 25, 2016.
- 1065.644 Vacuum-decay leak rate. April 28, 2014.
- 1065.645 Amount of water in an ideal gas. ~~April 28, 2014~~ October 25, 2016.
- 1065.650 Emission calculations. ~~February 19, 2015~~ 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. ~~April 28, 2014~~ October 25, 2016.
- 1065.659 Removed water correction. April 28, 2014.
- 1065.660 THC, NMHC, and CH₄ determination. ~~September 15, 2011~~ October 25, 2016.
 - 1. Subparagraphs (a) through (a)(2). [No change.]
 - 2. Delete subparagraph (a)(3).
 - 3. Subparagraphs (a)(4) through (b). [No change.]
 - 4. Delete subparagraph (c).
 - 5. Subparagraph (d). [No change.]
 - 6. Delete subparagraph (e).

- 1065.665 THCE and NMHCE determination. ~~April 28, 2014~~ October 25, 2016.
- 1065.667 Dilution air background emission correction. ~~September 15, 2014~~ 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. ~~September 15, 2014~~ 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. ~~April 28, 2014~~ 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.

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- 1065.735 Diesel exhaust fluid. October 25, 2016.
- 1065.740 Lubricants. July 13, 2005.
- 1065.745 Coolants. July 13, 2005.
- 1065.750 Analytical gases. ~~April 28, 2014~~ 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. ~~April 28, 2014~~ June 30, 2014.
- 1065.850 Calculations. April 28, 2014.

Subpart J – Field Testing and Portable Emission Measurement Systems

- 1065.901 Applicability. June 30, 2008.
- 1065.905 General provisions. April 28, 2014.
- 1065.910 PEMS auxiliary equipment for field testing. April 30, 2010.
- 1065.915 PEMS instruments. April 28, 2014.
- 1065.920 PEMS calibrations and verifications. April 28, 2014.
- 1065.925 PEMS preparation for field testing. September 15, 2011.
- 1065.930 Engine starting, restarting, and shutdown. July 13, 2005.
- 1065.935 Emission test sequence for field testing. June 30, 2008.

1065.940 Emission calculations. November 8, 2010.

Subpart K – Definitions and Other Reference Information

1065.1001 Definitions. ~~April 28, 2014~~ 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. ~~April 28, 2014~~ October 25, 2016.

A. Federal Provisions. [No change.]

B. California Provisions.

ARB means Air Resources Board.

1065.1010 Incorporation by reference. ~~April 28, 2014~~ 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, 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.

- 1068.420 How do I know when my engine family fails an SEA? October 25, 2016.
- 1068.425 What happens if one of my production-line engines/equipment exceeds the emission standards? October 25, 2016.
- 1068.430 What happens if a family fails an SEA? October 25, 2016.
- 1068.435 May I sell engines/equipment from a family with a suspended certificate of conformity? October 8, 2008.
- 1068.440 How do I ask ARB to reinstate my suspended certificate? April 30, 2010.
- 1068.445 When may ARB revoke my certificate under this subpart and how may I sell these engines/equipment again? October 8, 2008.
- 1068.450 What records must I send to ARB? October 25, 2016.
- 1068.455 What records must I keep? October 8, 2008.

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