

APPENDIX C

California Environmental Protection Agency
AIR RESOURCES BOARD

PROPOSED

CALIFORNIA 2001 THROUGH 2014 MODEL CRITERIA POLLUTANT EXHAUST EMISSION STANDARDS AND TEST PROCEDURES ~~AND FOR 2009 THROUGH 2016 AND SUBSEQUENT MODEL~~ GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES

Adopted: August 5, 1999
Amended: December 27, 2000
Amended: July 30, 2002
Amended: September 5, 2003 (corrected February 20, 2004)
Amended: May 28, 2004
Amended: August 4, 2005
Amended: June 22, 2006
Amended: October 17, 2007
Amended: May 2, 2008
Amended: December 2, 2009
Amended: February 22, 2010
Amended: March 29, 2010
Amended: September 27, 2010
Amended: [INSERT DATE OF AMENDMENT]

Note: The proposed amendments to this document are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions compared to the test procedures as last amended September 27, 2010. [No change] indicates proposed federal provisions that are also proposed for incorporation herein without change. Existing intervening text that is not amended in this rulemaking is indicated by “* * * *”.

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NOTE: This document is incorporated by reference in sections 1960.1(k) and 1961(d), title 13, California Code of Regulations (CCR). It contains the majority of the requirements necessary for certification of a passenger car, light-duty truck or medium-duty vehicle for sale in California, in addition to containing the exhaust emission standards and test procedures for these motor vehicles. However, reference is made in these test procedures to other ARB documents that contain additional requirements necessary to complete an application for certification. These other documents are designed to be used in conjunction with this document. They include:

1. “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);

42. “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” (incorporated by reference in section 1962, title 13, CCR);

23. “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” (incorporated by reference in section 1962.1, title 13, CCR);

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

45. “California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” (incorporated by reference in section 1978(b), title 13, CCR);

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

67. “California Smog Index Label Specifications for 2004 through 2009 Model Year Passenger Cars and Light-Duty Trucks” (incorporated by reference in section 1965, title 13, CCR);

78. “California Environmental Performance Label Specifications for 2009 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles” (incorporated by reference in section 1965, title 13, CCR);

89. Warranty Requirements (sections 2037 and 2038, title 13, CCR);

910. “Specifications for Fill Pipes and Openings of 1977 through 2014 Motor Vehicle Fuel Tanks” (incorporated by reference in section 2235, title 13, CCR);

~~110.~~ “Guidelines for Certification of 1983 through 2002 Model Year Federally Certified Light-Duty Motor Vehicles for Sale in California” (incorporated by reference in section 1960.5, title 13, CCR); ~~and~~

12. “Guidelines for Certification of 2003 and Subsequent Model Year Federally Certified Light-Duty Motor Vehicles for Sale in California” (incorporated by reference in section 1960.5, title 13, CCR);

~~134.~~ “California Non-Methane Organic Gas Test Procedures,” (incorporated by reference in section 1961(d), title 13, CCR); ~~and-~~

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

The section numbering conventions for this document are set forth in Part I, section A.3 on page A-2.

Amend “CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2001 AND SUBSEQUENT MODEL PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES, “ as incorporated by reference in Title 13, California Code of Regulations, Section 1961(d) to read:

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CALIFORNIA 2001 THROUGH 2014 MODEL CRITERIA POLLUTANT EXHAUST EMISSION STANDARDS AND TEST PROCEDURES AND FOR 2009 THROUGH 2016 AND SUBSEQUENT MODEL GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

The provisions of Subparts B, C, and S, Part 86, Title 40, Code of Federal Regulations, as adopted or amended on May 4, 1999 or as last amended on such other date set forth next to the 40 CFR Part 86 section title listed below, and to the extent they pertain to exhaust emission standards and test procedures, are hereby adopted as the “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and for 2009 through 2016 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” with the following exceptions and additions.

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

A. General Applicability

1. §86.1801 Applicability.

1.1 §86.1801-01. December 6, 2002. Amend as follows:

1.1.1 Amend subparagraph (a) as follows: Except as otherwise indicated, the provisions of this subpart apply to new 2001 through 2016 ~~and later~~ model year Otto-cycle and diesel-cycle passenger cars, light-duty trucks and medium-duty vehicles, including alternative fuel and hybrid electric vehicles. In cases where a provision applies only to a certain vehicle group based on its model year, vehicle class, motor fuel, engine type, or other distinguishing characteristics, the limited applicability is cited in the appropriate section or paragraph.

* * * *

1.2 §86.1801-12. ~~As proposed at 74 Fed. Reg. 49454, 49752 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ Amend as follows:

* * * *

1.2.9 Subparagraph (i) [No change, except that this subparagraph shall only apply to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program for the 2012 through 2016 model years, in accordance with section E of these test procedures.]

1.2.10 Subparagraph (j) [No change, except that this subparagraph shall only apply to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program for the 2012 through 2016 model years, in accordance with section E of these test procedures.]

1.2.11 Subparagraph (k) [No change, except that this subparagraph shall only apply to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program, in accordance with section E of these test procedures.]

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B. Definitions, Acronyms and Abbreviations

1. §86.1803 Definitions.

1.1 §86.1803-01. February 26, 2007. [No change, except as otherwise noted below.]

1.2 §86.1803-01. ~~As proposed at 74 Fed. Reg. 49454, 49753 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ [No change, except as otherwise noted below.] The version of §86.1803-01 as incorporated by this section B.1.2 shall only apply to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program for the 2012 through 2016 model years, in accordance with section E of these test procedures.

2. California Definitions.

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“All-Electric Range Test” means a test sequence used to determine the range of an electric or hybrid electric vehicle without the use of its auxiliary power unit. The All-Electric Range Test is described in the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 ~~and Subsequent~~ Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.”

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“Hybrid electric vehicle” or **“HEV”** means any vehicle that can draw propulsion energy from both of the following on-vehicle sources of stored energy: 1) a consumable fuel and 2) an

~~energy storage device such as a battery, capacitor, or flywheel. which is included in the definition of a “series hybrid electric vehicle,” a “parallel hybrid electric vehicle,” or a “battery assisted combustion engine vehicle.”~~

* * * *

“Intermediate Volume Manufacturer” means any 2009 ~~through 2016 and subsequent~~ model year manufacturer with California sales between 4,501 and 60,000 new light- and medium-duty vehicles 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 sales shall be based on projected California sales. A manufacturer’s California sales shall consist of all vehicles or engines produced by the manufacturer and delivered for sale in California, except that vehicles or engines produced by the manufacturer and marketed in California by another manufacturer under the other manufacturer’s nameplate shall be treated as California sales of the marketing manufacturer.

For purposes of applying the 2009 ~~through 2016 and subsequent~~ model year Greenhouse Gas requirements for intermediate volume manufacturers, the annual sales from different firms shall be aggregated in the following situations: (1) vehicles produced by two or more firms, each one of which either has a greater than 10% equity ownership in another or is more than 10% owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of greater than 10% in each firm.

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“2012 through 2016 MY National greenhouse gas program” or **“2012 through 2016 MY National greenhouse gas final rule”** means the national program that applies to new 2012 through 2016 model year passenger cars, light-duty trucks, and medium-duty passenger vehicles as ~~proposed~~ adopted by the U.S. Environmental Protection Agency at 74 Fed. Reg. 49454, 49748 (September 28, 2009) and adopted by EPA on April 1, 2010, (75 Fed. Reg. 25324, 25677 (May 7, 2010)) [insert page] (April [insert date], 2010), as incorporated in and amended by these test procedures.

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~~**“Parallel hybrid electric vehicle”** means any vehicle that allows power to be delivered to the driven wheels by either a combustion engine and/or by a battery powered electric motor.~~

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~~**“Series hybrid electric vehicle”** means any vehicle that allows power to be delivered to the driven wheels solely by a battery powered electric motor, but which also incorporates the use of a combustion engine to provide power to the battery and/or electric motor.~~

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“Small volume manufacturer” means any manufacturer whose projected or 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. A manufacturer's California sales shall consist of all vehicles or engines produced by the manufacturer and delivered for sale in California, except that vehicles or engines produced by the manufacturer and marketed in California by another manufacturer under the other manufacturer's nameplate shall be treated as California sales of the marketing manufacturer. ~~Beginning with~~ For the 2009 ~~through 2016~~ model years, the annual sales from different firms shall be aggregated in the following situations: (1) vehicles produced by two or more firms, one of which is 10% or greater part owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of 10% or more in each of the firms; or (3) vehicles produced by two or more firms having a common corporate officer(s) who is (are) responsible for the overall direction of the companies; or (4) vehicles imported or distributed by all firms where the vehicles are manufactured by the same entity and the importer or distributor is an authorized agent of the entity.

* * * *

“Zero-emission vehicle” or **“ZEV”** means any vehicle certified to the zero-emission standards set forth in the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 ~~through 2017~~ and ~~Subsequent~~ Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.”

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C. General Requirements for Certification

1. §86.1805 Useful Life.

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1.3 §86.1805-12. ~~As proposed at 74 Fed. Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ [No change, except that this section §86.1805-12 shall only apply to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program ~~for the 2012 through 2016 model years~~, in accordance with section E of these test procedures.]

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3. §86.1807 Vehicle Labeling.

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3.3 California Labeling Requirements.

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3.3.2. For all 2004 ~~and subsequent~~ through 2014 model-year vehicles (except zero-emission vehicles (ZEVs)), the tune-up label shall also contain the following information lettered in the English language in block letters and numerals which shall be of a color that contrasts with the background of the label. For all 2015 and 2016 model-year vehicles, the tune-up label shall conform to the requirements set forth in section C.3 of 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.” ÷

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(b) Identification of the Exhaust Emission Control System, including but not limited to:

ADSTWC = Hydrocarbon Adsorbing Three-Way Catalyst;
AIR = Secondary Air Injection (Pump);

* * * *

* EHOC - Electrically Heated Oxidation Catalyst;
* EHTWC - Electrically Heated Three-Way Catalyst;

* * * *

* FFS - Flexible Fuel Sensor;

* * * *

* ~~_____ Pending confirmation as SAE protocol~~

Abbreviations used shall be in accordance with SAE J1930, ~~JUN 1993~~ October 2008, including the above nomenclature unless the Executive Officer approves a more current version of SAE J1930. ~~The Executive Officer shall recommend abbreviations for components not listed in SAE J1930, JUN 1993.~~ For components not listed in SAE J1930, the manufacturer shall request Executive Officer approval of the abbreviations to be used for the components. Executive Officer approval shall be based on the consistency of the abbreviation with existing terminology used for the component in the applicable industry, ability to provide appropriate distinction from other similar components, and ability to be deciphered intuitively by users of the label.

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5. §86.1809 Prohibition of Defeat Devices.

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5.2 §86-1809-10. February 26, 2007. As proposed at 74 Fed. Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. [insert page] (April [insert date], 2010). [No change except that requirements applicable to the Air Conditioning Idle Test shall only apply to vehicles certifying to the National greenhouse gas program, and subparagraph (e) shall apply to vehicles subject to the California TLEV, LEV, ULEV and SULEV standards.]

5.3 §86-1809-12. May 7, 2010. [No change except that requirements applicable to the Air Conditioning Idle Test shall only apply to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program, and subparagraph (e) shall apply to vehicles subject to the California LEV, ULEV and SULEV standards.]

D. §86.1810 General standards; increase in emissions; unsafe conditions; waivers

1. §86.1810-01. December 8, 2005. Amend §86.1810-01 as follows:

This section applies to model year 2001 through 2016 ~~and later~~ light-duty vehicles, light-duty trucks, and medium-duty vehicles fueled by gasoline, diesel, methanol, ethanol, natural gas and liquefied petroleum gas fuels. Multi-fueled vehicles (including bi-fueled, dual-fueled and flexible-fueled vehicles) shall comply with all requirements established for each consumed fuel (or blend of fuels in the case of flexible-fueled vehicles). This section also applies to hybrid electric vehicles. The standards of this subpart apply to both certification and in-use vehicles unless otherwise indicated.

* * * *

1.1 Measurement of Hydrocarbon Emissions.

1.1.1 Except as otherwise indicated in these test procedures, for vehicles fueled by gasoline, methanol, ethanol, natural gas, or liquefied petroleum gas and certified to the Tier 1 standards, hydrocarbon emissions shall mean non-methane hydrocarbons (NMHC) and shall be measured in accordance with Part B (Determination of NMHC Emissions by Flame Ionization Detection) of the “California Non-Methane Organic Gas Test Procedures,” ~~as incorporated by reference in Part II, section A.100.5.4 of these test procedures.~~ For vehicles fueled by gasoline, methanol, ethanol, natural gas, or liquefied petroleum gas and certified to the TLEV, LEV, ULEV and SULEV standards, hydrocarbon emissions shall mean non-methane organic gases (NMOG) and shall be

measured in accordance with the “California Non-Methane Organic Gas Test Procedures,” as incorporated by reference in Part II, section A.100.5.4 of these test procedures.

1.1.2 For diesel vehicles, NMOG shall mean non-methane hydrocarbons and shall be measured in accordance with Part B of the “California Non-Methane Organic Gas Test Procedures,” as incorporated by reference in Part II, section A.100.5.4 of these test procedures.”

1.1.3 For vehicles certifying to the SFTP standards set forth in Section E.1.2.1 of these test procedures, hydrocarbon emissions shall be measured as follows: for PCs and LDTs certified to the Tier 1 exhaust standards, hydrocarbon emissions shall be measured in accordance with the “California Non-Methane Hydrocarbon Test Procedures,” as last amended May 15, 1990, which is incorporated herein by reference. For PCs and LDTs certified to the TLEV exhaust standards hydrocarbon emissions shall be measured in accordance with Part B (Determination of Non-Methane Hydrocarbon Mass Emissions by Flame Ionization Detection) of the “California Non-Methane Organic Gas Test Procedures,” as incorporated by reference in Part II, section A.100.5.4 of these test procedures. For alcohol-fueled vehicles certifying to the standards in Section E.1.2.1., “Non-Methane Hydrocarbons” shall mean “Organic Material Non-Methane Hydrocarbon Equivalent.”

2. Supplemental FTP General Provisions for California.

2.1 Amend 40 CFR §86.1810-01(i) as follows:

* * * *

2.1.2 ~~Subparagraph (4)~~ [No change.] ~~Delete subparagraph (4); replace with:~~ The SFTP standards apply to PCs and LDTs certified on alternative fuels. The standards also apply to the gasoline and diesel fuel operation of fuel-flexible PCs and LDTs, and dual-fuel PCs and LDTs.

* * * *

2.1.4 Delete subparagraph (6); replace with: **Air to Fuel Ratio Requirement.** With the exception of cold-start conditions, warm-up conditions and rapid-throttle motion conditions (“tip-in” or “tip-out” conditions), the air to fuel ratio shall not be richer at any time than, for a given engine operating condition (e.g., engine speed, manifold pressure, coolant temperature, air charge temperature, and any other parameters), the leanest air to fuel mixture required to obtain maximum torque (lean best torque) with a tolerance of ~~six~~ three percent of the fuel consumption. The emission control system shall remain in the operating mode producing the best balance of HC, CO, and NOx catalyst efficiency (e.g. closed loop/stoichiometric operation on 3-way catalyst systems) under all conditions, except when required for engine component temperature protection, driver power request, start enrichment requirements, fuel shut-off situations (decelerations, rev limiter, torque management, etc.), or certain component malfunctions preventing safe closed-loop operation. The Executive Officer may approve a manufacturer's request for approval to use additional enrichment in subsequent testing if the manufacturer

demonstrates that additional enrichment is needed to protect the vehicle, occupants, engine, or emission control hardware.

* * * *

2.1.6 Delete subparagraph (8); replace with: **Small Volume Provisions.** Small volume manufacturers of PCs, LDTs, and MDVs shall certify 100% of their PC and LDT fleet in 2004 through 2014 ~~and subsequent~~ model years, and 100% of their MDV fleet in 2005 through 2014 ~~and subsequent~~ model years under the supplemental FTP requirements.

* * * *

3. §86.1810-09. ~~As proposed at 74 Fed. Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. July 6, 2011 [insert page] (April [insert date], 2010).~~ [No change, except that the amendments to §86.1810-01 set forth in D.1 and D.2 shall apply.]

E. California Exhaust Emission Standards.

Delete 40 CFR §§86.1811 through 86.1819, except that for model years 2012 through 2016, a manufacturer may demonstrate compliance with the requirements of sections E.2.5 and E.3.2 by demonstrating compliance with §86.1818.12 ~~as proposed at 74 Fed. Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. (July 6, 2011) [insert page] (April [insert date], 2010).~~

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The procedures for meeting the ZEV phase-in requirements and for earning ZEV credits are contained in the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 ~~and Subsequent~~ Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.”

* * * *

1. Exhaust Emission Standards.

1.1 FTP Exhaust Emission Standards for Light- and Medium-Duty Vehicles.

The exhaust emission standards set forth in this section refer to the exhaust emitted over the driving schedule set forth in title 40, CFR, Subparts B and C, except as amended in these test procedures.

* * * *

1.1.2 **LEV II Exhaust Standards.** The following LEV II standards represent the maximum exhaust emissions for the intermediate and full useful life from new 2004 through 2014 ~~and subsequent~~ model-year LEVs, ULEVs, and SULEVs, including fuel-flexible, bi-fuel and dual fuel vehicles when operating on the gaseous or alcohol fuel they are designed to use. Prior to the 2004 model year, a manufacturer that produces vehicles meeting these standards has the option of certifying the vehicles to the standards, in which case the vehicles will be treated as LEV II vehicles for purposes of the fleet-wide phase-in requirements.

**LEV II Exhaust Mass Emission Standards for New 2004 through 2014
and Subsequent Model LEVs, ULEVs, and SULEVs
in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes**

Vehicle Type	Durability Vehicle Basis (mi)	Vehicle Emission Category	NMOG (g/mi)	Carbon Monoxide (g/mi)	Oxides of Nitrogen (g/mi)	Formaldehyde (mg/mi)	Particulates (g/mi)
All PCs; LDTs 8,500 lbs. GVWR or less Vehicles in this category are tested at their loaded vehicle weight.	50,000	LEV	0.075	3.4	0.05	15	n/a
		LEV, Option 1	0.075	3.4	0.07	15	n/a
		ULEV	0.040	1.7	0.05	8	n/a
	120,000	LEV	0.090	4.2	0.07	18	0.01
		LEV, Option 1	0.090	4.2	0.10	18	0.01
		ULEV	0.055	2.1	0.07	11	0.01
		SULEV	0.010	1.0	0.02	4	0.01
	150,000 (optional)	LEV	0.090	4.2	0.07	18	0.01
		LEV, Option 1	0.090	4.2	0.10	18	0.01
		ULEV	0.055	2.1	0.07	11	0.01
		SULEV	0.010	1.0	0.02	4	0.01
	MDVs 8,501 - 10,000 lbs. GVWR Vehicles in this category are tested at their adjusted loaded vehicle weight.	120,000	LEV	0.195	6.4	0.2	32
ULEV			0.143	6.4	0.2	16	0.06
SULEV			0.100	3.2	0.1	8	0.06
150,000 (Optional)		LEV	0.195	6.4	0.2	32	0.12
		ULEV	0.143	6.4	0.2	16	0.06
		SULEV	0.100	3.2	0.1	8	0.06

Vehicle Type	Durability Vehicle Basis (mi)	Vehicle Emission Category	NMOG (g/mi)	Carbon Monoxide (g/mi)	Oxides of Nitrogen (g/mi)	Formaldehyde (mg/mi)	Particulates (g/mi)
MDVs 10,001-14,000 lbs. GVWR Vehicles in this category are tested at their adjusted loaded vehicle weight.	120,000	LEV	0.230	7.3	0.4	40	0.12
		ULEV	0.167	7.3	0.4	21	0.06
		SULEV	0.117	3.7	0.2	10	0.06
	150,000 (Optional)	LEV	0.230	7.3	0.4	40	0.12
		ULEV	0.167	7.3	0.4	21	0.06
		SULEV	0.117	3.7	0.2	10	0.06

1.2 Supplemental Federal Test Procedure (“SFTP”) Exhaust Emission Standards for Light- and Medium-Duty Vehicles.

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1.2.2 The following standards represent the maximum SFTP exhaust emissions at 4,000 miles for new 2001 through 2014 ~~and subsequent~~ model LEVs, ULEVs, and SULEVs in the passenger car and light-duty truck class, and new 2003 through 2014 ~~and subsequent~~ model year LEV, ULEV and SULEV medium-duty vehicles less than 8,500 pounds gross vehicle weight rating:

**SFTP EXHAUST EMISSION STANDARDS
FOR LEVS, ULEVS, AND SULEVS IN THE PASSENGER CAR, LIGHT-DUTY
TRUCK, AND MEDIUM-DUTY VEHICLE CLASSES**
(grams per mile)

Vehicle Type **	Gross Vehicle Weight Rating (lbs.)	LVW/ALVW Test Weight (lbs.)	US06 Test*		A/C Test*	
			NMHC + NOx	CO	NMHC + NOx	CO
PC <u>Vehicles in this category are tested at their loaded vehicle weight (curb weight plus 300 lbs.).</u>	All	All	0.14	8.0	0.20	2.7
LDT LDT <u>Vehicles in this category are tested at their loaded vehicle weight (curb weight plus 300 lbs.).</u>	< 6000 lbs.	0-3750 lbs. (LVW)	0.14	8.0	0.20	2.7
		3751-5750 lbs. (LVW)	0.25	10.5	0.27	3.5
MDV MDV <u>Vehicles in this category are tested at their adjusted loaded vehicle weight (average of curb weight and GVWR).</u>	6,001-8,500 lbs.	3751-5750 lbs. (ALVW)	0.40	10.5	0.31	3.5
		5751-8500 lbs. (ALVW)	0.60	11.8	0.44	4.0

* For certification purposes, testing shall be conducted at 4000 miles ±250 miles or at the mileage determined by the manufacturer for emission-data vehicles.

** The following definitions apply for purposes of this SFTP standards table only:

“LDT” (light-duty truck) is any motor vehicle rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.

“MDV” (medium-duty ~~truck~~ vehicle) is any motor vehicle having a manufacturer's gross vehicle weight rating of greater than 6,000 pounds and less than 14,001 pounds, except passenger cars and light-duty trucks. Vehicles with a gross vehicle weight rating over 8,500 pounds are exempted from the requirements of this subsection.

1.3 NMOG Standards for Fuel-Flexible, Bi-Fuel and Dual-Fuel Vehicles Operating on Gasoline.

* * * *

1.3.2 LEV II Standards for 2004 through 2014 and Subsequent Model Year Bi-fuel, Fuel-Flexible and Dual Fuel Vehicles Operating on Gasoline. The applicable exhaust mass emission standards for NMOG when certifying the vehicle for operation on gasoline (as specified in Part II, Section A. paragraph 100.3.1) are:

LEV II NMOG Standards for Bi-Fuel, Fuel-Flexible and Dual-Fuel Vehicles Operating on Gasoline (g/mi)			
Vehicle Type	Vehicle Emission Category	Durability Vehicle Basis	
		50,000 mi	120,000 mi
All PCs; LDTs, 0-8500 lbs. GVWR	LEV	0.125	0.156
	ULEV	0.075	0.090
	SULEV	0.010	0.040
MDVs, 8501-10,000 lbs. GVWR	LEV	n/a	0.230
	ULEV	n/a	0.167
	SULEV	n/a	0.117
MDVs, 10,001-14,000 lbs. GVWR	LEV	n/a	0.280
	ULEV	n/a	0.195
	SULEV	n/a	0.143

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1.5 Cold CO Standards.

The following standards represent the 50,000 mile cold temperature exhaust carbon monoxide emission levels from new 2001 through 2014 and ~~subsequent~~ model-year passenger cars, light-duty trucks, and medium-duty vehicles:

**2001 THROUGH 2014 AND SUBSEQUENT MODEL-YEAR COLD TEMPERATURE
CARBON MONOXIDE EXHAUST EMISSIONS STANDARDS FOR PASSENGER
CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES**
(grams per mile)

Vehicle Type	Carbon Monoxide
All PCs, LDTs 0-3750 lbs. LVW	10.0
LDTs 3751 lbs. LVW - 8500 lbs. GVWR LEV I and Tier 1 MDVs 8,500 lbs. GVWR and less	12.5

These standards are applicable to vehicles tested in accordance with 40 CFR Part 86 Subpart C, as modified in Part II, Section B of these test procedures at a nominal temperature of 20°F (-7°C). Natural gas vehicles, diesel-fueled vehicles, and medium-duty vehicles with a gross vehicle weight rating greater than 8,500 lbs. are exempt from these standards.

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1.7 Requirements for Vehicles Certified to the Optional 150,000 Mile Standards.

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(b) Requirement to Generate a Partial ZEV Allowance. A manufacturer that certifies to the 150,000 mile SULEV standards shall also generate a partial ZEV allocation according to the criteria set forth in section C.3 of the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 ~~through 2017 and Subsequent~~ Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.”

* * * *

1.12 When a Federally-Certified Vehicle Model is Required in California.

1.12.1 Basic Requirement. Whenever a manufacturer federally-certifies a 2004 ~~through 2014 or subsequent~~ model-year passenger car, light-duty truck or medium-duty vehicle model to the standards for a particular emissions bin that are more stringent than the standards for an applicable California vehicle emissions category, the equivalent California model may only be certified to (i) the California standards for a vehicle emissions category that are at least as stringent as the standards for the corresponding federal emissions bin, or (ii) the exhaust emission standards to which the federal model is certified. However, where the federal exhaust emission standards for the particular emissions bin and the California standards for a vehicle emissions category are equally stringent, the California model may only be certified to

either the California standards for that vehicle emissions category or more stringent California standards. The federal emission bins are those contained Tables S04-1 and S04-2 of 40 CFR section 86.1811-04(c) as adopted February 10, 2000. The criteria for applying this requirement are set forth in Part I. Section H.1 of these test procedures.

* * * *

1.13 Emission Standard for Fuel-Fired Heaters. Whenever a manufacturer elects to utilize an on-board fuel-fired heater on any passenger car, light-duty truck or medium-duty vehicle, the heater must meet the LEV II ULEV standards for passenger cars and light-duty trucks less than 8,500 pounds GVW set forth in Section E.1.1.2 of these test procedures. The exhaust emissions from the fuel-fired heater shall be determined in accordance with the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 ~~and Subsequent~~ Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.” On-board fuel-fired heaters may not be operable at ambient temperatures above 40°F.

1.14 Greenhouse Gas Emission Requirements. The greenhouse gas emission levels from new 2009 through 2016 ~~and subsequent~~ model year passenger cars, light-duty trucks, and medium-duty passenger vehicles shall not exceed the requirements set forth in Section E.2.5 of these test procedures. Light-duty trucks from 3751 lbs. LVW – 8500 lbs. GVWR that are certified to the Option 1 LEV II NOx Standard in Section E.1.1.2 of these test procedures are exempt from these greenhouse gas emission requirements, however, passenger cars, light-duty trucks 0-3750 lbs. LVW, and medium-duty passenger vehicles are not eligible for this exemption.

2. Emission Standards Phase-In Requirements for Manufacturers

2.1 Fleet Average NMOG Requirements for Passenger Cars and Light-Duty Trucks.

2.1.1 The fleet average non-methane organic gas exhaust mass emission values from the passenger cars and light-duty trucks produced and delivered for sale in California each model year by a manufacturer other than a small volume manufacturer or an independent low volume manufacturer shall not exceed:

FLEET AVERAGE NON-METHANE ORGANIC GAS EXHAUST MASS EMISSION REQUIREMENTS FOR LIGHT-DUTY VEHICLE WEIGHT CLASSES (50,000 mile Durability Vehicle Basis)		
Model Year	Fleet Average NMOG (g/mi)	
	All PCs; LDTs 0-3750 lbs. LVW	LDTs 3751 lbs. LVW - 8500 lbs. GVWR
2001	0.070	0.098
2002	0.068	0.095
2003	0.062	0.093
2004	0.053	0.085
2005	0.049	0.076
2006	0.046	0.062
2007	0.043	0.055
2008	0.040	0.050
2009	0.038	0.047
2010-2014+	0.035	0.043

2.1.2 Calculation of Fleet Average NMOG Value.

2.1.2.1 Basic Calculation.

(a) Each manufacturer's PC and LDT1 fleet average NMOG value for the total number of PCs and LDT1s produced and delivered for sale in California shall be calculated as follows:

$$\frac{(\sum [\text{Number of vehicles in a test group} \times \text{applicable emission standard}] + \sum [\text{Number of hybrid electric vehicles in a test group} \times \text{HEV NMOG factor}])}{\text{Total Number of Vehicles Produced, Including ZEVs and HEVs}}$$

(b) Each manufacturer's LDT2 fleet average NMOG value for the total number of LDT2s produced and delivered for sale in California shall be calculated as follows:

$$\frac{(\sum [\text{Number of vehicles in a test group} \times \text{applicable emission standard}] + \sum [\text{Number of hybrid electric vehicles in a test group} \times \text{HEV NMOG factor}])}{\text{Total Number of Vehicles Produced, Including ZEVs and HEVs}}$$

The applicable emission standards to be used in the above equations are as follows:

Model Year	Emission Category	Emission Standard Value	
		All PCs; LDTs 0-3750 lbs. LVW	LDTs 3751-5750 lbs. LVW
2001 through 2014 model year and subsequent (AB 965 vehicles only)	All	Federal Emission Standard to which Vehicle is Certified	Federal Emission Standard to which Vehicle is Certified
2001 - 2003	Tier 1	0.25	0.32
2001 - 2006 model year vehicles certified to the "LEV I" standards in E.1.1.1 (For TLEVs, 2001 - 2003 model years only)	TLEVs	0.125	0.160
	LEVs	0.075	0.100
	ULEVs	0.040	0.050
Model Year	Emission Category	All PCs; LDTs 0-3750 lbs. LVW	LDTs 3751 lbs. LVW - 8500 lbs. GVWR
2001 through 2014 and subsequent model year vehicles certified to the "LEV II" standards in E.1.1.2	LEVs	0.075	0.075
	ULEVs	0.040	0.040
	SULEVs	0.01	0.01
2001 through 2014 and subsequent vehicles certified to the optional 150,000 mile "LEV II" standards for PCs and LDTs in E.1.1.2	LEVs	0.064	0.064
	ULEVs	0.034	0.034
	SULEVs	0.0085	0.0085

2.1.2.2 **HEV NMOG Factor.** The HEV NMOG factor for light-duty vehicles is calculated as follows:

$$\text{LEV HEV Contribution Factor} = 0.075 - [(\text{Zero-emission VMT Factor}) \times 0.035]$$

$$\text{ULEV HEV Contribution Factor} = 0.040 - [(\text{Zero-emission VMT Factor}) \times 0.030]$$

where Zero-emission VMT Factor for HEVs is determined in accordance with Section C.3 of the "California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes" and the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes."

* * * *

2.1.3 Phase-in Requirements for Small Volume Manufacturers.

(a) In 2001 through 2006 model years, a small volume manufacturer shall not exceed a fleet average NMOG value of 0.075 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.100 g/mi for LDTs from 3751-5750 lbs. LVW calculated in accordance with subsection E.2.1.2. In 2007 through 2014 ~~and subsequent~~ model years, a small volume manufacturer shall not exceed a fleet average NMOG value of 0.075 for PCs and LDTs from 0-3750 lbs. LVW or 0.075 for LDTs from 3751 lbs. LVW - 8,500 lbs. GVW calculated in accordance with subsection E.2.1.2.

* * * *

2.1.5 Treatment of ZEVs. ZEVs classified as LDTs (>3750 lbs. LVW) that have been counted toward the ZEV requirement for PCs and LDTs (0-3750 lbs. LVW) as specified in Section C of the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 ~~and Subsequent~~ Model Zero-Emission Vehicles Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” shall be included in this equation.

* * * *

2.3 Medium-Duty Low-Emission Vehicle Phase-In Requirements.

2.3.1 (a) A manufacturer of MDVs, other than a small volume manufacturer, shall certify an equivalent percentage of its MDV fleet according to the following phase-in schedule:

Model Year	Vehicles Certified to Section E.1.1 (%)		Vehicles Certified to title 13 CCR Section 1956.8(g) or (h) (%)		
	LEV	ULEV	Tier 1	LEV	ULEV
2001	80	20	100	0	0
2002	70	30	0	100	0
2003	60	40	0	100	0
2004 <u>through</u> <u>2014 +</u>	40	60	0	0	100

* * * *

(c) **Phase-In Requirements for LEV II MDVs.** For the 2004 through 2006 model years, a manufacturer, other than a small volume manufacturer must phase-in at least one test group per model year to the MDV LEV II standards. All 2007 through 2014 and subsequent model year MDVs, including those produced by a small volume manufacturer, are subject to the LEV II MDV standards. Beginning in the 2005 model year, all medium-duty engines certified to the optional medium-duty engine standards in title 13, CCR §1956.8(c) or (h), including those produced by a small volume manufacturer, must meet the standard set forth in title 13, CCR §1956.8(c) or (h), as applicable. A manufacturer that elects to certify to the Option 1 or Option 2 federal standards as set forth in 40 CFR §86.005-10(f) is not subject to these phase-in requirements.

2.3.2 **Identifying a Manufacturer's MDV Fleet.** For the 2001 through 2014 and subsequent model years, each manufacturer's MDV fleet shall be defined as the total number of California-certified MDVs produced and delivered for sale in California. The percentages shall be applied to the manufacturer's total production of California-certified medium-duty vehicles delivered for sale in California. For the 2005 through 2014 and subsequent model years, a manufacturer that elects to certify engines to the optional medium-duty engine standards in title 13, CCR, §1956.8(c), or (h) shall not count those engines in the manufacturer's total production of California-certified medium-duty vehicles for purposes of this subparagraph.

2.4 Implementation Schedules for SFTP Emission Standards

2.4.1 A manufacturer of PCs and of LDTs certified to the Tier 1 and TLEV standards as set forth in Section E.1 of these test procedures, except a small volume manufacturer, shall certify a minimum percentage of its PC and LDT fleet according to the following phase-in schedule.

Model Year	Percentage of PC and LDT Fleet
2001	25
2002	50
2003	85
2004 <u>through 2014 and subsequent</u>	100

* * * *

2.4.2 (a) A manufacturer of PCs, LDTs, and MDVs certified to the LEV, ULEV and SULEV standards as set forth in Section E.1 of these test procedures, except a small volume manufacturer, shall certify a minimum percentage of its PC and LDT fleet, and a minimum percentage of its MDV fleet, according to the following phase-in schedule.

Model Year	Percentage	
	PC, LDT	MDV
2001	25	NA
2002	50	NA
2003	85	25
2004	100	50
2005 through 2014 and subsequent	100	100

* * * *

2.5 Fleet Average Greenhouse Gas Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.

2.5.1(i) The fleet average greenhouse gas exhaust mass emission values from passenger cars, light-duty trucks, and medium-duty passenger vehicles that are produced and delivered for sale in California each model year by a large volume manufacturer shall not exceed:

FLEET AVERAGE GREENHOUSE GAS EXHAUST MASS EMISSION REQUIREMENTS FOR PASSENGER CAR, LIGHT-DUTY TRUCK, AND MEDIUM-DUTY PASSENGER VEHICLE WEIGHT CLASSES¹ (4,000 mile Durability Vehicle Basis)		
Model Year	<i>Fleet Average Greenhouse Gas Emissions (grams per mile CO₂-equivalent)</i>	
	<i>All PCs; LDTs 0-3750 lbs. LVW</i>	<i>LDTs 3751 lbs. LVW - 8500 lbs. GVWR; MDPVs</i>
2009	323	439
2010	301	420
2011	267	390
2012	233	361
2013	227	355
2014	222	350
2015	213	341
2016+	205	332

¹ Each manufacturer shall demonstrate compliance with these values in accordance with Section E.2.5.2.

2.5.1.1 For each model year, a manufacturer must demonstrate compliance with the fleet average requirements in this section E.2.5.1 based on one of two options applicable throughout the model year, either:

Option 1: the total number of passenger cars, light-duty trucks, and medium-duty passenger vehicles that are certified to the California exhaust emission standards in section 1961.1, title 13, CCR, and are produced and delivered for sale in California; or

Option 2: the total number of passenger cars, light-duty trucks, and medium-duty passenger vehicles that are certified to the California exhaust emission standards in section 1961.1, title 13, CCR, and are produced and delivered for sale in California, the District of Columbia, and all states that have adopted California's greenhouse gas emission standards for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

2.5.1.1.1 For the 2009 and 2010 model years, a manufacturer that selects compliance Option 2 must notify the Executive Officer of that selection in writing within 30 days of the effective date of the amendments to this section 2.5.1.1. or must comply with Option 1.

2.5.1.1.2 For the 2011 through 2016 ~~and later~~ model years, a manufacturer that selects compliance Option 2 must notify the Executive Officer of that selection in writing prior to the start of the applicable model year or must comply with Option 1.

* * * *

2.5.1(ii) For the 2012 through 2016 model years, a manufacturer may elect to demonstrate compliance with this section E.2.5 by demonstrating compliance with the 2012 through 2016 MY National greenhouse gas program as follows:

2.5.1.1 A manufacturer that selects compliance with this option E.2.5.1(ii) must notify the Executive Officer of that selection, in writing, prior to the start of the applicable model year or must comply with E.2.5.1(i).

2.5.1.2 The manufacturer must submit to ARB a copy of the Model Year CAFE report that it submitted to EPA as required under 40 CFR §86-1865-12 ~~as proposed at 74 Fed. Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, (75 Fed. Reg. (May 7, 2010) [insert page] (April [insert date], 2010)~~, for demonstrating compliance with the 2012 through 2016 MY National greenhouse gas program and the EPA determination of compliance. These must be submitted within 30 days of receipt of the EPA determination of compliance, for each model year that a manufacturer selects compliance with this option E.2.5.1(ii).

2.5.1.3 The manufacturer must provide to the Executive Officer separate values for the number of vehicles produced and delivered for sale in California, the District of Columbia, and each individual state that has adopted California's greenhouse gas emission standards for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507). and

2.5.1.34 If a manufacturer has outstanding greenhouse gas debits at the end of the 2011 model year, as calculated in accordance with E.3.2, the manufacturer must submit to the Executive Officer a plan for offsetting all outstanding greenhouse gas debits by using greenhouse gas credits earned under the 2012 through 2016 MY National greenhouse gas program before applying those credits to offset any 2012 through 2016 MY National greenhouse gas program debits. Upon approval of the plan by the Executive Officer, the manufacturer may demonstrate compliance with this section E.2.5 by demonstrating compliance with the 2012 through 2016 MY National greenhouse gas program. Any California debits not offset by the end of the 2016 model year 2012 through 2016 MY National greenhouse gas program reporting period are subject to penalties as provided in section E.3.2.

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2.5.2.2 Calculation of Greenhouse Gas Values for Bi-Fuel Vehicles, Fuel-Flexible Vehicles, Dual-Fuel Vehicles, and Grid-connected Hybrid Electric Vehicles.

For bi-fuel, fuel-flexible, dual-fuel, and grid-connected hybrid electric vehicles, a manufacturer shall calculate a grams per mile average CO₂-equivalent value for each GHG vehicle test group, in accordance with Section E.2.5.2.1 of these test procedures, based on exhaust mass emission tests when the vehicle is operating on gasoline or diesel, as applicable.

2.5.2.2.1 Optional Alternative Compliance Mechanisms. Beginning with the 2010 model year, a manufacturer that demonstrates that a bi-fuel, fuel-flexible, dual-fuel, or grid-connected hybrid electric GHG vehicle test group will be operated in use in California on the alternative fuel shall be eligible to certify those vehicles using this optional alternative compliance procedure, upon approval of the Executive Officer.

(a) To demonstrate that bi-fuel, fuel-flexible, dual-fuel, or grid-connected hybrid electric vehicles within a GHG vehicle test group will be operated in use in California on the alternative fuel, the manufacturer shall provide data that shows the previous model year sales of such vehicles to fleets that provide the alternative fuel on-site, or, for grid-connected hybrid electric vehicles, to end users with the capability to recharge the vehicle on-site. This data shall include both the total number of vehicles sales that were made to such fleets or end users with the capability to recharge the vehicle on-site and as the percentage of total GHG vehicle test group sales. The manufacturer shall also provide data demonstrating the percentage of total vehicle miles traveled by the bi-fuel, fuel-flexible, dual-fuel, or grid-connected hybrid electric vehicles sold to each fleet or to end users with the capability to recharge the vehicle on-site in the previous model year using the alternative fuel and using gasoline or diesel, as applicable.

(b) For each GHG vehicle test group that receives approval by the Executive Officer under Section E.2.5.2.2.1(a), a grams per mile CO₂-equivalent value shall be calculated as follows:

$$\text{CO}_2\text{-equivalent value} = [A \times E \times B \times C] + [(1 - (A \times E \times B)) \times D]$$

where: A = the percentage of previous model year vehicles within a GHG vehicle test group that were operated in use in California on the alternative fuel during the previous calendar year;

B = the percentage of miles traveled by “A” during the previous calendar year;

C = the CO₂-equivalent value for the GHG vehicle test group, as calculated in Section E.2.5.2.1, when tested using the alternative fuel;

D = the CO₂-equivalent value for the GHG vehicle test group, as calculated in Section E.2.5.2.1, when tested using gasoline or diesel, as applicable; and

E = 0.9 for grid-connected hybrid electric vehicles or

E = 1 for bi-fuel, fuel-flexible, and dual-fuel vehicles.

The Executive Officer may approve use of a higher value for “E” for a grid-connected hybrid electric vehicle GHG vehicle test group if a manufacturer demonstrates that the vehicles can reasonably be expected to maintain more than 90 percent of their original battery capacity over a 200,000 mile vehicle lifetime. The manufacturer may demonstrate the appropriateness of a higher value either by providing data from real world vehicle operation; or by showing that these vehicles are equipped with batteries that do not lose energy storage capacity until after 100,000 miles; or by offering 10 year/150,000 mile warranties on the batteries.

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2.5.3 Requirements for Intermediate Volume Manufacturers.

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2.5.3.3 In the 2016 ~~and subsequent~~ model years, an intermediate volume manufacturer shall either:

- (a) not exceed a fleet average greenhouse gas emissions value of 233 g/mi for PCs and LDT1s and 361 g/mi for LDT2s and MDPVs, or
- (b) not exceed a fleet average greenhouse gas value of 0.75 times the baseline fleet average greenhouse gas value for PCs and LDT1s or 0.82 times the baseline fleet average greenhouse gas value for LDT2s and MDPVs, as calculated in Section E.2.5.3.2.

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2.5.4 Requirements for Small Volume Manufacturers and Independent Low Volume Manufacturers.

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2.5.4.3 In the 2016 ~~and subsequent~~ model years, a small volume manufacturer and an independent low volume manufacturer shall either:

- (a) not exceed the fleet average greenhouse gas emissions value calculated for each GHG vehicle test group for which a comparable vehicle is sold by a large volume manufacturer, in accordance with Section E.2.5.4; or
- (b) not exceed a fleet average greenhouse gas emissions value of 233 g/mi for PCs and LDT1s and 361 g/mi for LDT2s and MDPVs; or
- (c) upon approval of the Executive Officer, if a small volume manufacturer demonstrates a vehicle model uses an engine, transmission, and emission control system that is identical to a configuration certified for sale in California by a large volume manufacturer, those small volume manufacturer vehicle models are exempt from meeting the requirements in paragraphs E.2.5.4.3(a) and (b) of this Section.

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3. Calculation of Credits/Debits

3.1 Calculation of NMOG Credits/Debits

3.1.1 Calculation of NMOG Credits for Passenger Cars and Light-Duty Trucks.

3.1.1.1 In 2001 through 2014 ~~and subsequent~~ model years, a manufacturer that achieves fleet average NMOG values lower than the fleet average NMOG requirement

for the corresponding model year shall receive credits in units of g/mi NMOG determined as:

$$[(\text{Fleet Average NMOG Requirement}) - (\text{Manufacturer's Fleet Average NMOG Value})] \times (\text{Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs}).$$

A manufacturer with 2001 through 2014 ~~and subsequent~~ model year fleet average NMOG values greater than the fleet average requirement for the corresponding model year shall receive debits in units of g/mi NMOG equal to the amount of negative credits determined by the aforementioned equation. For the 2001 through 2006 model year, the total g/mi NMOG credits or debits earned for PCs and LDTs 0-3750 lbs. LVW and for LDTs 3751-5750 lbs. and LDTs 3751 lbs. LVW - 8500 lbs. GVWR shall be summed together. For the 2007 through 2014 ~~and subsequent~~ model years, the total g/mi NMOG credits or debits earned for PCs and LDTs 0-3750 lbs. LVW and for LDTs 3751 lbs. LVW - 8500 lbs. GVWR shall be summed together. The resulting amount shall constitute the g/mi NMOG credits or debits accrued by the manufacturer for the model year.

3.1.2 Calculation of Vehicle Equivalent NMOG Credits for Medium-Duty Vehicles. In 2001 through 2014 ~~and subsequent~~ model years, a manufacturer that produces and delivers for sale in California MDVs in excess of the equivalent requirements for LEVs, ULEVs and/or SULEVs certified to the exhaust emission standards set forth in section E.1 of these test procedures or to the exhaust emission standards set forth in section 1956.8(h), title 13, CCR shall receive "Vehicle-Equivalent Credits" (or "VECs") calculated in accordance with the following equation, where the term "produced" means produced and delivered for sale in California:

* * * *

3.1.2.1 The MDV HEV VEC allowance is calculated as follows:

$$1 + [(\text{LEV standard} - \text{ULEV standard}) \times (\text{Zero-emission VMT Allowance}) \div \text{LEV standard}] \text{ for LEVs;} \\ 1 + [(\text{ULEV standard} - \text{SULEV standard}) \times (\text{Zero-emission VMT Allowance}) \div \text{ULEV standard}] \text{ for ULEVs;} \\ 1 + [(\text{SULEV standard} - \text{ZEV standard}) \times (\text{Zero-emission VMT Allowance}) \div \text{SULEV standard}] \text{ for SULEVs;}$$

where "Zero-emission VMT Allowance" for an HEV is determined in accordance with Section C.3 of the "California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes" and the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 ~~and Subsequent~~ Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes."

* * * *

3.1.2.4 For a manufacturer that elects to certify engines to the optional medium-duty engine standards in title 13, CCR §1956.8(c) or (h), all such 2005 through 2014 ~~and~~

~~subsequent~~ model year engines used in MDVs, including those produced by a small volume manufacturer, shall be subject to the emissions averaging provisions applicable to heavy-duty diesel or Otto-cycle engines as set forth in the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines,” or the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines, incorporated by reference in title 13, CCR, §1956.8(b) or (d), as applicable.

3.1.3 Procedure for Offsetting NMOG Debits.

3.1.3.1 A manufacturer shall equalize emission debits by earning g/mi NMOG emission credits or VECs in an amount equal to the g/mi NMOG debits or VEDs, or by submitting a commensurate amount of g/mi NMOG credits or VECs to the Executive Officer that were earned previously or acquired from another manufacturer. For 2001 through 2003 and for 2007 through 2014 ~~and subsequent~~ model years, manufacturers shall equalize emission debits by the end of the following model year. For 2004 through 2006 model years, a manufacturer shall equalize NMOG debits for PCs and LDTs and LEV II MDVs within three model years and prior to the end of the 2007 model year. If emission debits are not equalized within the specified time period, the manufacturer shall be subject to the Health and Safety Code §43211 civil penalty applicable to a manufacturer which sells a new motor vehicle that does not meet the applicable emission standards adopted by the state board. The cause of action shall be deemed to accrue when the emission debits are not equalized by the end of the specified time period. For the purposes of Health and Safety Code §43211, the number of passenger cars and light-duty trucks not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi NMOG emission debits for the model year by the g/mi NMOG fleet average requirement for PCs and LDTs 0-3750 lbs. LVW and LDTs 3751 lbs. LVW - 8500 lbs. GVWR applicable for the model year in which the debits were first incurred and the number of medium-duty vehicles not meeting the state board's emission standards shall be equal to the amount of VEDs incurred.

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3.2 Calculation of Greenhouse Gas Credits/Debits.

3.2.1 Calculation of Greenhouse Gas Credits for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.

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3.2.1.2 In the 2009 through 2016 and subsequent model years, a manufacturer that achieves fleet average Greenhouse Gas values lower than the fleet average Greenhouse Gas requirement for the corresponding model year shall receive credits in units of g/mi Greenhouse Gas determined as:

$$[(\text{Fleet Average Greenhouse Gas Requirement}) - (\text{Manufacturer's Fleet Average Greenhouse Gas Value})] \times (\text{Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs}).$$

3.2.2 A manufacturer with 2009 through 2016 and subsequent model year fleet average Greenhouse Gas values greater than the fleet average requirement for the corresponding model year shall receive debits in units of g/mi Greenhouse Gas equal to the amount of negative credits determined by the aforementioned equation. For the 2009 through 2016 and subsequent model years, the total g/mi Greenhouse Gas credits or debits earned for PCs and LDT1s and for LDT2s and MDPVs shall be summed together. The resulting amount shall constitute the g/mi Greenhouse Gas credits or debits accrued by the manufacturer for the model year.

3.2.3 Procedure for Offsetting Greenhouse Gas Debits.

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3.2.3.2 Greenhouse Gas emission credits earned in the 2000 through 2008 model years shall be treated as if they were earned in the 2011 model year and shall retain full value through the 2012 model year. Greenhouse Gas emission credits earned in the 2009 through 2016 and subsequent model years shall retain full value through the fifth model year after they are earned. The value of any credits earned in the 2000 through 2008 model years that not used to equalize debits accrued in the 2009 through 2012 model years shall be discounted by 50% at the beginning of the 2013 model year, shall be discounted to 25% of its original value if not used by the beginning of the 2014 model year, and will have no value if not used by the beginning of the 2015 model year. Any credits earned in the 2009 through 2016 and subsequent model years that are not used by the end of the fifth model year after they are accrued shall be discounted by 50% at the beginning of the sixth model year after being earned, shall be discounted to 25% of its original value if not used by the beginning of the seventh model year after being earned, and will have no value if not used by the beginning of the eighth model year after being earned.

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F. Requirements and Procedures for Durability Demonstration

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4. §86.1823 Durability demonstration procedures for exhaust emissions.

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4.2 §86.1823-08. ~~As proposed at 74 Fed. Reg. 49454, 49757 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. September 15, 2011 [insert page] (April [insert date], 2010).~~ [No change, except that ~~the amendments to §86.1823-01 set forth in F.4.1 shall apply, and~~ subparagraph (m) applies only to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program.]

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G. Procedures for Demonstration of Compliance with Emission Standards

1. §86.1827 Test Group Determination.

1.1 §86.1827-01. ~~As proposed at 74 Fed. Reg. 49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ [No change, except that subparagraphs (a)(5) and (f) shall only apply to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program.]

* * * *

3. §86.1829 Durability data and emission data testing requirements; waivers.

3.1 §86.1829-01. ~~As proposed at 74 Fed. Reg. 49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ Amend as follows:

* * * *

3.1.3 Amend (b)(1)(iii)(G) as follows: For the 2012 model year only, in lieu of testing a vehicle for N2O emissions, 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 and good engineering judgment. This subparagraph (b)(1)(iii)(G) only applies to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program.

3.1.4 Amend (b)(4)(i) as follows: All 2001 through 2016 ~~and subsequent~~ model-year emission-data vehicles shall be required to be tail-pipe tested at 4,000 miles or at the mileage at which the vehicle is stabilized as determined in §86.1827-01 and demonstrate compliance with the California Inspection and Maintenance (“I/M”) emission standards as specified in the “Mandatory Exhaust Emissions Inspection Standards and Test Procedures,” title 16, California Code of Regulations, Section 3340.42. A manufacturer shall have the option of using the I/M test procedures in place at the time of certification or, if the I/M test procedures have been amended within two years of the time of certification, a manufacturer may use the preceding procedures. Test vehicles shall undergo preconditioning procedures prior to the tail-pipe test, which consist of idle conditions for a minimum period of ten minutes after the thermostat is

open. Preconditioning and test procedures shall be conducted at an ambient temperature from 68° to 86° F. The manufacturer shall, in accordance with good engineering practices, attest that such test vehicles will meet the requirements of this section when preconditioned and tested at ambient temperatures from 35° to 68° F.

* * * *

3.4 Greenhouse Gas Testing Requirements.

A manufacturer shall demonstrate compliance with the greenhouse gas requirements each year by testing one vehicle per each test group that represents the vehicle configuration that is expected to be “worst-case” for greenhouse gas emissions, as calculated in Section E.2.5.2.1, subject to approval by the Executive Officer. A manufacturer may test additional vehicles within the test group that represent vehicle configuration with lower greenhouse gas emissions values than the “worst-case” configuration. All vehicles shall be tested using both the FTP and Highway Test Procedures as modified in Part II of these test procedures. A manufacturer may use emissions data from tests it conducts as part of the Corporate Average Fuel Economy Program (CAFE), in accordance with 40 CFR Part 600 – Fuel Economy and Greenhouse Gas Exhaust Emissions of Motor Vehicles, to demonstrate compliance with the greenhouse gas requirements, once those data have been judged acceptable by the U.S. Environmental Protection Agency. A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse gas requirements must use all of the data that is used by the U.S. Environmental Protection Agency to determine a manufacturer’s corporate average fuel economy for the applicable model year, and may forego testing of the “worst-case” configuration.

* * * *

4. §86.1830-01 Acceptance of Vehicles for Testing. ~~January 17, 2006. [No change.]~~

4.1 §86.1830-01. January 17, 2006. [No change.]

5. §86.1831-01 Mileage accumulation requirements for test vehicles. ~~January 17, 2006. [No change.]~~

5.1 §86.1831-01. January 17, 2006. [No change.]

* * * *

8. §86.1834 Allowable maintenance.

* * * *

8.2 HEVs.

(a) The manufacturer shall equip the vehicle with a maintenance indicator consisting of a light that shall activate automatically by illuminating the first time the minimum performance level is observed for all battery system components. Possible battery system

components requiring monitoring are: (i) battery water level; (ii) temperature control; (iii) pressure control; and (iv) other parameters critical for determining battery condition.

(b) ~~The manufacturer shall equip “off vehicle charge capable HEVs” with a useful life indicator for the battery system consisting of a light that shall illuminate the first time the battery system is unable to achieve an all-electric operating range (starting from a full state-of-charge) which is at least 75% of the range determined for the vehicle in the Urban Driving Schedule portion of the All-Electric Range Test (see the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes”).~~

9. §86.1835-01 Confirmatory certification testing. ~~April 13, 2001. [No change.]~~

9.1 §86.1835-01. May 7, 2010. [No change.]

* * * *

12. §86.1838 Small volume manufacturers certification procedures. ~~January 17, 2006.~~

12.1 §86.1838-01. ~~December 6, 2002~~ January 17, 2006. [No change, except that the reference to 15,000 units shall mean 4,500 units in California and the reference to 14,999 units shall mean 4,499 units in California.]

* * * *

H. Certification, Information and Reporting Requirements.

1. §86.1841 Compliance with emission standards for the purpose of certification

* * * *

1.2 For 2012 through 2016 model year vehicles certifying to the 2012 through 2016 MY National greenhouse gas program, §86.1841-01, as proposed at 74 Fed. Reg. 49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. (July 6, 2011) [insert page] (April [insert date], 2010), shall apply. Changes specified under section H.1.1 shall also apply for this section H.1.2.

* * * *

1.5 Certification of a Federal Vehicle in California. Whenever a manufacturer federally-certifies a 2004 through 2014 ~~or subsequent~~ model-year passenger car, light-duty truck or medium-duty vehicle model to the standards for a particular emissions bin that are more stringent than the standards for an applicable California vehicle emissions category, the equivalent California model may only be certified to (i) the California standards for a vehicle emissions category that are at least as stringent as the standards for the corresponding federal emissions bin, or (ii) the exhaust emission standards to which the federal model is certified. However, where the federal exhaust emission standards for the particular emissions bin and the California standards for a vehicle emissions category are equally stringent, the California model may only be certified to either the California standards for that vehicle emissions category or more stringent California standards. The federal emission bins are those contained Tables S04-1 and S04-2 of 40 CFR section 86.1811-04(c) as adopted February 10, 2000. A California vehicle model is to be treated as equivalent to a federal vehicle model if all of the following characteristics are identical:

- (a) Vehicle make and model;
- (b) Cylinder block configuration (e.g., L-6, V-8);
- (c) Displacement;
- (d) Combustion cycle;
- (e) Transmission class;
- (f) Aspiration method (e.g., naturally aspirated, turbocharged); and
- (g) Fuel (e.g., gasoline, natural gas, methanol).

The comparative stringency of the standards for the federal exhaust emissions bin and for the California vehicle emissions category shall be based on a comparison of the sum of the 100,000, 120,000, or 150,000 mile standards for NMOG and NO_x.

1.5.1 If a federally-certified vehicle model is certified in California in accordance with subparagraph 1.45, the model shall be subject to the federal requirements for exhaust emissions, SFTP emissions, cold CO emissions and highway NO_x. The vehicle model shall be subject to all other California requirements including evaporative emissions, OBD II, greenhouse gas emissions, and emissions warranty, except that a 2004 or earlier model-year vehicle in the federal heavy light-duty truck or medium-duty passenger vehicle classes may at the manufacturer's option be subject to the federal requirements for evaporative emissions and OBD II.

1.5.2 Prior to certification of a 2004 through 2014 ~~or subsequent~~ model-year vehicle, a manufacturer must submit information sufficient to enable the Executive Officer to determine whether there is a federally-certified vehicle model for that model year that is equivalent to the California vehicle model based on the criteria listed in subparagraph 1.45.

1.5.3 If the Executive Officer determines that there is a federally-certified vehicle model for that model year that is equivalent to the California vehicle model, the following information shall be submitted with the Part I or Part II Application for Certification as set forth below:

- (a) Part I Application for Certification: (i) Evidence of federal certification including, but not limited to, federal certification exhaust emission levels and compliance with federal SFTP, cold CO and highway NO_x emission levels; and (ii) evidence of compliance with California evaporative emission requirements, California OBD II requirements, and California greenhouse gas

requirements or, where permitted under Section 1.45.1 for a 2004 or earlier model-year vehicle, evidence of federal certification evaporative emission levels and compliance with federal OBD II requirements.

* * * *

1.5.7 The requirements in Section H.1.45 do not apply in the case of a federally-certified vehicle model that is only marketed to fleet operators for applications that are subject to clean fuel fleet requirements established pursuant to section 246 of the federal Clean Air Act (42 U.S.C. sec. 7586). In addition, the Executive Officer shall exclude from the requirements a federally-certified vehicle model where the manufacturer demonstrates to the Executive Officer's reasonable satisfaction that the model will primarily be sold or leased to clean fuel fleet operators for such applications, and that other sales or leases of the model will be incidental to marketing to those clean fuel fleet operators.

1.5.8 A manufacturer may certify a passenger car, light-duty truck or medium-duty vehicle to federal exhaust emission standards pursuant to Section H.1.45 prior to the 2004 model year.

* * * *

4. §86.1844 Information Requirements: Application for Certification and Submittal of Information Upon Request.

4.1 §86.1844-01. ~~February 26, 2007~~ September 15, 2011. Amend as follows:

* * * *

4.1.2 Modify §86.1844-01(d) as follows:

- (a) Delete §86.1844-01(d)(9).
- (b) Delete §86.1844-01(d)(15)(ii) and replace it with the following: For vehicles with fuel fired heaters, a manufacturer must include the information specified in this section H.4.4.
- (~~b~~c) Add the following requirement: A description of each greenhouse gas test vehicle including the criteria listed in Section G.2.4. and any additional information used by a manufacturer to demonstrate a “worst-case” vehicle configuration used to comply with the requirements of Section G.2.4.

* * * *

4.2 OBD Requirements.

For 2001 ~~through 2016 and subsequent~~ model-year passenger cars, light-duty trucks and medium-duty vehicles, information shall be submitted in the application for certification according to the requirements of section 1968, et seq., title 13, CCR, as applicable.

4.3 **HEVs.**

For HEVs, the information required in the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” must be supplied with the Part I application for certification.

* * * *

4.5 **Greenhouse Gas Reporting Requirements.**

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(b) For the 2012 through 2016 model years, a manufacturer that elects to demonstrate compliance with the requirements of sections E.2.5 and E.3.2 by demonstrating compliance with the 2012 through 2016 MY National greenhouse gas program must submit all data to the Executive Officer in accordance with the reporting requirements as required under section E.2.5.1(ii) and 40 CFR §86.1865-12, ~~as proposed at 74 Fed. Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. 25324, 25691 [insert page] (April [insert date], 2010).~~

(c) All data submitted in accordance with this section H.4.5, must be submitted electronically and organized in a format specified by the Executive Officer to clearly demonstrate compliance with the fleet average greenhouse gas exhaust emission requirements in section E.2.5 or 40 CFR §86.1865-12 ~~as proposed at 74 Fed. Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. 25324, 25691 [insert page] (April [insert date], 2010),~~ as applicable.

I. In-Use Compliance Requirements and Procedures

1. §86.1845 Manufacturer in-use verification testing requirements.

* * * *

1.2 §86.1845-04. ~~As proposed at 74 Fed. Reg. 49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ Amend as follows:

* * * *

2. §86.1846 Manufacturer in-use confirmatory testing requirements.

2.1 §86.1846-01. ~~As proposed at 74 Fed. Reg. 49454, 49759 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ [No Change.]

* * * *

J. Procedural Requirements

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3. §86.1848-10 Certification. ~~As proposed at 74 Fed. Reg. 49454, 49759 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. July 6, 2011 [insert page] (April [insert date], 2010).~~ [No change, except that this version of §86.1848-10 shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program ~~for the 2012 through 2016 model years.~~]

* * * *

9. §86.1854-12 Prohibited acts. ~~As proposed at 74 Fed. Reg. 49454, 49759 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ [No change.]

* * * *

14. §86.1863-07 Optional Chassis Certification for Diesel Vehicles. ~~June 17, 2003~~
September 15, 2011. [No change]
15. §86.1865-12 How to comply with the fleet average CO₂ standards. ~~As proposed at 74 Fed. Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. September 15, 2011 [insert page] (April [insert date], 2010).~~
[No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program ~~for the 2012 through 2016 model years.~~]
16. §86.1866-12 CO₂ fleet average credit programs. ~~As proposed at 74 Fed. Reg. 49454, 49763 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. July 6, 2011 [insert page] (April [insert date], 2010).~~ [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program ~~for the 2012 through 2016 model years.~~]
17. §86.1867-12 Optional early CO₂ credit programs. ~~As proposed at 74 Fed. Reg. 49454, 49766 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. July 6, 2011 [insert page] (April [insert date], 2010).~~ [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program ~~for the 2012 through 2016 model years.~~]

PART II: CALIFORNIA EXHAUST AND PARTICULATE EMISSION TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES

This part describes the equipment required and the procedures necessary to perform gaseous and particulate exhaust emission tests (40 CFR Part 86, Subpart B); cold temperature test procedures (40 CFR Part 86, Subpart C); the California 50°F test procedure; the development of reactivity adjustment factors; and the supplemental federal test procedure (40 CFR Part 86, Subpart B) on passenger cars, light-duty trucks, and medium-duty vehicles.

A. 40 CFR Part 86, Subpart B - Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles and New Light-Duty Trucks and New Otto-Cycle Complete Heavy-Duty Vehicles; Test Procedures.

* * * *

100.2 Equipment and Facility Requirements.

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86.111-94 Exhaust gas analytical-system. ~~As proposed at 74 Fed.Reg. 49454, 49748 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. May 7, 2010~~ [insert page] (April [insert date], 2010).

* * * *

100.3 Certification Fuel Specifications.

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100.3.2 Certification Diesel Fuel Specifications.

* * * *

100.3.2.2 Certification Diesel Fuel Specifications for the 2007 through 2016 ~~and Subsequent~~ Model Years.

Amend subparagraphs §86.113-07(b)(2) and (b)(3) as follows:

(b)(2) Except as noted below, petroleum fuel for diesel vehicles meeting the specifications referenced in 40 CFR §86.113-07(b)(2), or substantially equivalent specifications approved by the Executive Officer, shall be used in exhaust emission testing. The grade of petroleum fuel recommended by the engine manufacturer, commercially designated as “Type 2-D” grade diesel, shall be used. The petroleum fuel used in exhaust emission testing may meet the specifications listed below, or substantially equivalent specifications approved by the Executive Officer, as an option to the specifications in 40 CFR §86.113-07(b)(2). Where a manufacturer elects pursuant to this subparagraph to conduct exhaust emission testing using the specifications of 86.113-94(b)(2) and in §86.113-07(b)(2), or the specifications listed below, the Executive Officer shall

conduct exhaust emission testing with the diesel fuel meeting the specifications elected by the manufacturer.

California Certification Diesel Fuel Specifications For the 2007 through 2016 and Subsequent Model Years		
Fuel Property	Limit	Test Method ^(a)
Natural Cetane Number	47-55	D 613-86
Distillation Range		§2282(g)(3), title 13, CCR
IBP	340-420 °F	
10% point	400-490 °F	
50% point	470-560 °F	
90% point	550-610 °F	
EP	580-660 °F	
API Gravity	33-39°	D 287-82
Total Sulfur	7-15 ppm	§2282(g)(3), title 13, CCR
Nitrogen Content	100-500 ppmw	§2282(g)(3), title 13, CCR
Total Aromatic Hydrocarbons	8-12 vol. %	§2282(g)(3), title 13, CCR
Polycyclic Aromatic Hydrocarbons	1.4 wt. % (max)	§2282(g)(3), title 13, CCR
Flashpoint	130 °F (max)	D 93-80
Viscosity @ 40°F	2.0-4.1 centistokes	D 445-83

^(a) ASTM specifications unless otherwise noted. A reference to a subsection of §2282, title 13, CCR, means the test method identified in that subsection for the particular property. 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 of the specified method.

* * * *

100.3.9 Identification of New Clean Fuels to be Used in Certification Testing.

* * * *

(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 NMOG (on a reactivity-adjusted basis), NOx, CO, and the potential risk associated with toxic air contaminants, as determined pursuant to the procedures set forth in “California Test Procedures for Evaluating Substitute Fuels and New Clean Fuels through 2014,” ~~as adopted September 17, 1993.~~ In the case of fuel-flexible vehicles or dual-fuel vehicles which were not certified on the new clean fuel but are capable of being operated on it, emissions during operation with the new clean fuel shall not increase compared to emissions during vehicle operation on gasoline.

* * * *

100.5 Test Procedures and Data Requirements.

86.127-00 Test procedures; overview. May 4, 1999. ~~As proposed at 74 Fed. Reg. 49454, 49748 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. [insert page] (April [insert date], 2010).~~

86.127-12 Test procedures; overview. May 7, 2010.

* * * *

86.130-00 Test sequence; general requirements. October 22, 1996.

100.5.2 California test sequence; general requirements.

100.5.2.1 Delete subparagraph (a) of §86.130-00 and replace with:

For purposes of determining conformity with 50°F test requirements, the procedures set forth in Part II, Section C. For all hybrid electric vehicles and all 2001 and subsequent model-year vehicles certifying to running loss and useful life evaporative emission standards, the test sequence specified in “California Evaporative Emission Standards and Test Procedures for ~~1978~~ 2001 and Subsequent Model Motor Vehicles” as incorporated by reference in section 1976, title 13, CCR shall apply.

* * * *

86.132-00 Vehicle preconditioning. October 22, 1996.

100.5.3 California Vehicle Preconditioning Requirements.

100.5.3.1 Add the following subparagraph: For all hybrid electric vehicles and all 2001 ~~2000~~ and subsequent model-year vehicles subject to running loss and useful life evaporative emission standards, the preconditioning sequence for the Federal Test Procedure specified in “California Evaporative Emission Standards and Test Procedures for 2001 ~~1978~~ and Subsequent Model Motor Vehicles” as incorporated by reference in section 1976, title 13, CCR shall apply. In addition, the preconditioning sequence for the SFTP described in subparagraphs (n) and (o) of paragraph 86.132-00 shall apply.

* * * *

- 86.135-00 Dynamometer procedure. October 22, 1996. [No change, except that the amendments to §86.135-90, 70 FR 72917 (December 8, 2005), shall apply.]
- 86.135-~~1200~~ Dynamometer procedure. ~~As proposed at 74 Fed. Reg. 49454, 49749 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ [No change.]

* * * *

- 86.144-94 Calculations; exhaust emissions. July 13, 2005.

100.5.4 Calculations; exhaust emissions.

100.5.4.1 The exhaust emission calculations for California are set forth in the “California Non-Methane Organic Gas Test Procedures,” ~~which is incorporated by reference in section 1961(d), title 13, CCR.~~

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- 86.165-12 Air Conditioning idle test procedure. ~~As proposed at 74 Fed. Reg. 49454, 49749 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. July 6, 2011 [insert page] (April [insert date], 2010).~~ [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program for the 2012 through 2016 model years.]
- 86.166-12 Method for calculating emissions due to air conditioning leakage. ~~As proposed at 74 Fed. Reg. 49454, 49750 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. May 7, 2010 [insert page] (April [insert date], 2010).~~ [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program for the 2012 through 2016 model years.]
- ~~86.167-12 N₂O measurement devices. As proposed at 74 Fed. Reg. 49454, 49751 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]~~
- ~~86.168-12 Interference verification for N₂O analyzers. As proposed at 74 Fed. Reg. 49454, 49752 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed. Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]~~

B. Subpart C - Emission Regulations for 1994 and Later Model Year Gasoline-Fueled New Light-Duty Vehicles, and New Light-Duty Trucks and New Medium-Duty Passenger Vehicles; Cold Temperature Test Procedures.

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